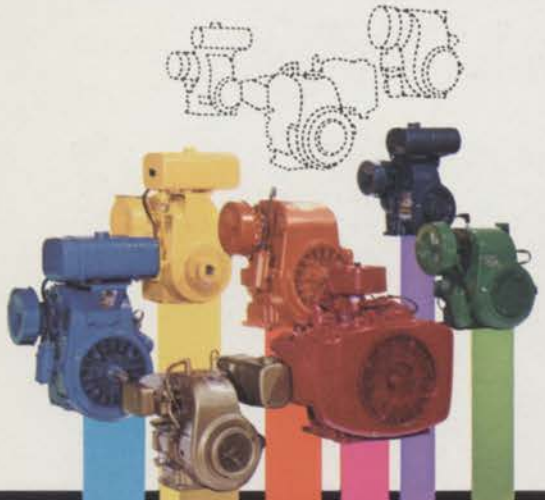
WEEDS TREES and TURF

AUGUST 1974

Richard Malpass on the ninth fairway of Portland, Oregon's Riverside Golf and Country Club

TURF PROTECTION DIRECTORY ISSUE

Small wonder.



Kohler engines . . . rugged performance in a compact package. Performance that can give your equipment a competitive advantage.

Kohler builds hard-working, long-life, cast iron engines . . . and backs them up with worldwide service and a sound warranty.

There are eleven small wonders in the Kohler 4-cycle line. Eleven power choices for you, in one- and two-cylinder models, 4 to 24 horsepower. And every one is a proven performer.

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...no wonder 7 out of 10 major manufacturers of garden tractors specify Kohler 4-cycle engines.

KOHLER

WEED EATER

The Revolutionary NEW Grounds Maintenance Machine That Cuts, Trims, Edges, And Manicures...Without The Use Of Blades!

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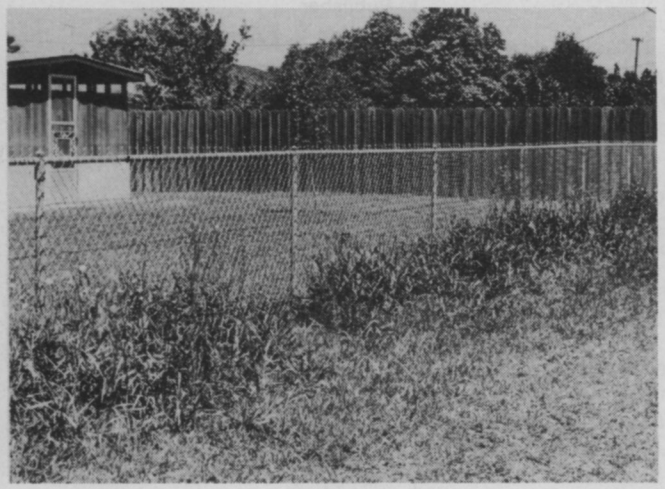

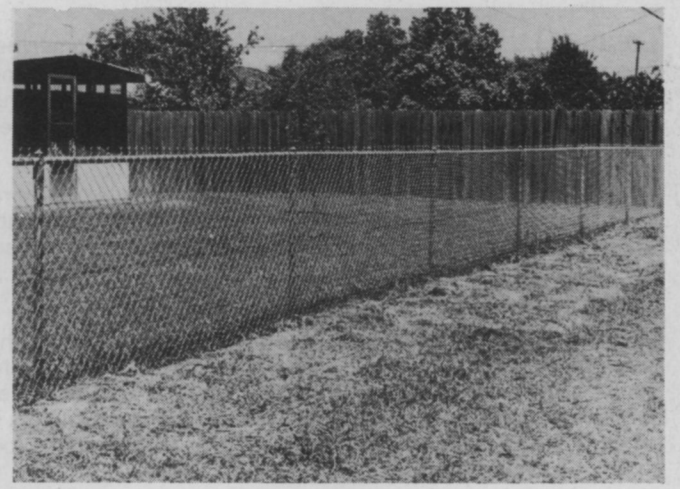

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At Last.
The revolutionary solution to your grounds care maintenance problems. The WEED EATER gasoline-powered "WEEDY" (Model #670) is specially designed for commercial use and/or large estates.

"WEEDY" cuts away your grounds maintenance headaches. Around trees, fences, walkways, stonework (headstones and memorials). Quickly and efficiently. Without the use of blades.

Without The Use Of Blades?
Right. "WEEDY" cuts with specially-treated monofilament "fishing line". Housed in a unique high-impact cutting head that makes fast work of your most stubborn maintenance problems. Reaching into and around places no conventional lawn tool can reach.

Safe And Fast.
"WEEDY" cuts over glass bottles, tin cans, rocks, electrical cable and the operators' own feet... without mishap. Because "WEEDY" cuts without blades. And "WEEDY" can finish most edging and maintenance jobs 100% faster than the time required by conventional equipment.

WEED EATERS, INC.

5146 Richmond Avenue, Houston, Texas 77027
Tel. (713) 622-7200

◀ For More Details On Preceding Page Circle (121) On Treply card

For More Details Circle (155) on Reply Card

WEEDS TREES and TURF®

August 1974, Vol. 13, No. 8

THE COVER—Richard W. Malpass operates a Rogers Aero-Blade verti-cutter seeder on the ninth fairway of Riverside Golf and Country Club in Portland, Oregon. Malpass, superintendent of the 18-hole private course, has used the seeder for nearly two years with satisfactory results.

THE CASE OF THE INVISIBLE VAPOR BARRIER—Ladies and gentlemen of the jury, Exhibit A is what some people refer to as a crime. It was once a beautifully paved parking lot now nearly destroyed by weed break-through. Donald Fox tries to prove beyond a shadow of a doubt that protection by an invisible vapor barrier could have prevented this heinous act. **11**

LOUISVILLE DECLARES A PARK DISASTER—Sometimes it takes a disaster to bring people closer together. In Louisville, Kentucky, a spring tornado flattened the 400-acre Cherokee Park. A group of citizens calling themselves Trees, Inc. has banned together in an effort to raise funds for reforesting the park. **16**

OLD TECHNIQUE . . . NEW METHOD—A method spawned during winter's fuel shortage has developed into more economical brush and shrub control. A no-oil herbicice developed by DuPont is used for rights-of-way maintenance by Missouri electric co-ops with good results. **22**

SOD INDUSTRY SECTION—Further developments in the use of plastic sod base. Dr. William H. Mitchell, of the University of Delaware, has been experimenting with the system in Delaware. Mitchell's experiments have made him a leading authority in plastic netting as a sod base. A second story features the history of the Princeton Manufacturing Company, Columbus, Ohio, and its line of sod harvesters. **26**

1974 TURF PROTECTION DIRECTORY—WEEDS TREES and TURF's chemical guide for Green Industry managers. Professional turfgrass management means keeping abreast of new developments and thoughtful planning regarding what chemicals are needed to keep turf free of pests. WTT's directory lists chemical manufacturers two ways: (1) product groupings and the companies manufacturing each product, and (2) name of the company and the products manufactured by each. **37**

Government News/Business 8
Editorial 10
People on the Move 20
Meeting Dates 27
Insect Report 28
Sod Industry Section 26
Industry News and Newsmakers 31
New Products 64
Classifieds and Advertisers 65
Trimmings 66

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Editor
Donald D. Miller

Assistant Editor
Roger E. Yount

Assistant Editor
Jean A. Rohrer

President
Hugh Chronister

Publisher
Arthur V. Edwards

Director of Circulation
D.D. Langley

ADVERTISING SERVICES

Advertising Production
Darrell Gilbert
9800 Detroit Avenue
Cleveland, Ohio 44102
216+651-5500

ADVERTISING SALES OFFICES

HEADQUARTERS
Cleveland, Ohio 44102
9800 Detroit Avenue
216-651-5500
Extension 27

New York, N.Y. 10017
757 Third Avenue
212-421-1350
Russell B. Bandy

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This hulking thing can pick up a mere cigarette butt.

Rubber Finger Pick Up.

That's the pick-up system that's so good they got a patent for it. And every Jacobsen Sweeper in the line has it.

Wes Wilson of Big Bear Equipment, Inc., Omaha, Nebraska, can tell you all about it. So can any Jacobsen Distributor, for that matter. Or better yet, show you how it works on your own turf.

You'll be able to sweep up virtually any kind of debris, wet or dry. Rocks. Bottle caps. Broken twigs and branches. Cans, bottles, leaves, grass clippings, matchsticks. And cigarette butts.

No matter how large or small your turf area is, there's a Jacobsen Sweeper to do the job. After all, it's the biggest line in the whole industry.

It includes power take off sweepers. Self-propelled units. And two of the models offer hydraulic lift dumping.

There are also several sensible accessories you'll want to seriously think about, too. Like the special Thatch/Thinner attachment that dethatches, sweeps it up, and picks up other debris all at the same time. Or the Curb Broom and the Bag Attachment.

This would be a good time to ask your nearby Jacobsen Distributor to give you a demonstration. But please refrain from asking him if things have been picking up lately.

That's one of his best lines.

Your Jacobsen Distributors.

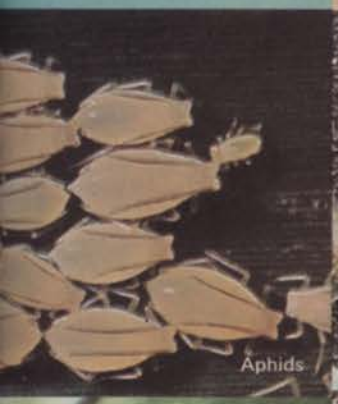
Before we sell it, we buy it.

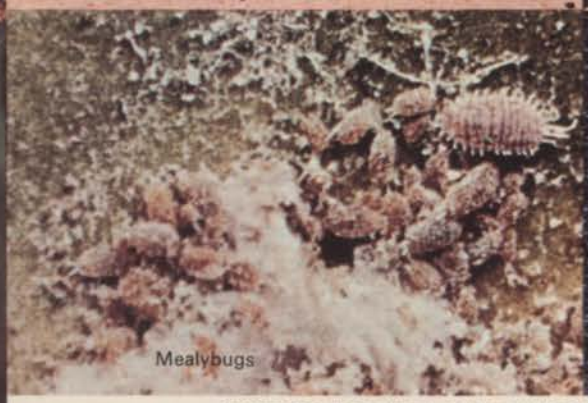
For the name of the distributor near you write: Jacobsen Turf Distributor Directory, 1721 Packard Avenue, Racine, Wisconsin 53403

For More Details Circle (123) on Reply Card

1974 will be a bad year for bugs.

Bad for bugs of turf and ornamental plants. And bad for household and structural bugs. Because Dow has a pair of insecticides that will make their lives miserable. There's ZECTRAN* insecticide, a general use biodegradable insect killer that works on almost all major foliage-feeding insect pests—even the hard-to-kill kinds. Use ZECTRAN on over 600 different flowers, ground covers, trees, shrubs and turf. And then there's DURSBAN* insecticide. Its effectiveness, economy, non-phytotoxicity and biodegradability make it the choice of professional turf men for golf greens, turf farms, home and





Ag-Organics Department, Midland, Michigan 48640

industrial lawns—or wherever grass and ornamentals are grown. It's especially effective to control the hairy chinch bug and sod webworm. DURSBAN insecticide is also preferred by PCO's for controlling household and structural pests—especially resistant roaches that laugh at other sprays. Please remember to read and observe all precautions on the product label. Bugs, get ready for 1974!

*Trademark of The Dow Chemical Company

DOW*

DOW CHEMICAL U.S.A.

For More Details Circle (109) on Reply Card

Government News / Business

Toro Company announced the July 1 sale of the Toro-owned distributorship in Pensacola, Fla.-- Toro Distributing (Gulf Coast) -- to L. F. (Lee) Strebel for an undisclosed sum. According to David T. McLaughlin, president of Toro, this was the first return to private control of a company-owned distribution facility. McLaughlin said the company did not foresee re-selling any of its six other distribution centers.

Labor Secretary, Peter J. Brennan, said the Department found 495,443 alleged violations of job safety and health standards during the more than 145,000 workplace compliance inspections from OSHA's April 1971 effective date through April 1974. OSHA issued 96,289 citations for the violations and proposed penalties totaling $12,372,853, he added. "Clearly, OSHA's enforcement of this law has had significant impact on the working conditions of American men and women," Brennan said.

American Motors Corporation subsidiary, Wheel Horse Products, has agreed to purchase the assets of General Electric Company's Outdoor Power Equipment operation. G.E.'s plant is located near Schenectady, N. Y., and manufactures and distributes the "Elec-Trak" line of battery-powered lawn and garden tractors, riding mowers and attachments. Wheel Horse will continue the manufacture of the battery-powered products at the New York facility. G. E. and Wheel Horse reached agreement for continuing supply of replacement parts and furnishing of warranty service for Elec-Trak products in the field.

Interstate Commerce Commission told the nation's railroads it felt constrained to suspend their recently-filed proposal for a general freight rate increase of about 10 percent, but that it would let them refile for a general rate increase of that amount subject to conditions designed, the Commission said, "to substantially improve service."

J. I. Case's Outdoor Power Equipment division has expanded its production facilities to Neenah, Wis. General manager of the Case division, W. J. Schlapman, said the firm leased a 30,000 square foot building in Kampo Industrial Park. Reason for expansion? Increased tractor and attachment sales.

U. S. motor-vehicle registrations increased to more than 125 million during 1973. The total, released by the Federal Highway Administration, is 6,530, 686 higher than the 1972 figure.

Agricultural Business Group of Velsicol Chemical Corp. moved its western district office to 1551 East Shaw Avenue, Fresno, California. New telephone number is (209) 224-8536.

A burst of brilliance...
Fylking for the World's Fair!

Fylking Kentucky bluegrass is a superior, elite bluegrass that burst like a star on the scene in the sixties!

Since then Fylking has established records making it the perfect choice for the official grass at the environmental World's Fair, Expo '74.

Fylking has proven to have superior resistance to disease and drought; withstands traffic. Its thickly woven rhizome root system develops dense sod so quickly Fylking can be lifted in 90 days. Fylking can be mowed at 3/4 inch (even 1/2 inch) and thrive. It absorbs carbon dioxide pollutants, gives off oxygen, cools air by releasing water vapor.

A superior mixer, Fylking greens up earlier in spring, stays greener in summer heat, remains green longer into fall.

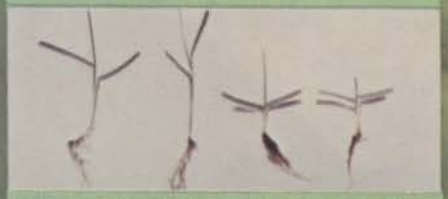
Choose Fylking and your customers are getting a grass good enough for a World's Fair!

FYLKING KENTUCKY BLUEGRASS

U. S. Plant Patent 2887

Another fine product of Jacklin Seed Company

Fylking's rhizome root system develops so thickly, under ideal conditions sod can be lifted in 90 DAYS.



Low growth, short leaf sheaths and abundant tillering of Fylking (right) compared with another elite bluegrass plant.

Cross section displays thick, luxuriant turf, fine leaf texture and brilliant green color of Fylking.

For More Details Circle (122) on Reply Card

editorial

Last month we had the pleasure again of attending the summer field days of the American Sod Producers Association. The meeting was headquartered in the rapidly-growing suburban Washington, D.C., area known as New Carrollton, Maryland. And quite a fitting location this turned out to be.

Rolling farmland seemed to be changing into city before our very eyes. And where the road once wiggled along to Baltimore, there was now four-lane, city traffic.

We were returning to our motel in this traffic the first day, after a pleasant tour of sod farms, when our bus seemed to become a moving target for the native automobiles.

"These drivers," our tour guide remarked, "really get to know the territory quickly. They learn how to get to and from work and when they learn how to reach the shopping center, they are old veterans. They may not know their neighbors, but they are already settling in."

It is an appropriate discussion and a rather symbolic setting for the commercial sod production industry. And for all segments of the green industry.

Isn't New Carrollton really a microscopic view of our nation? Rapidly changing, new faces, new buildings and ideas, new problems? Most critical to us all are the changing demands brought to the country and to our industries by the New Carrolltons. To the sod grower . . . to tree care people, to us all . . . this is not only new landscape, it is a new way of life. It is not only a market, but the changes it brings are the reason for the market.

As always, we were pleased to be with sod people on such a delightful and informative occasion. But, more than this, we consider the industry and its leaders to be located quite near the nucleus of the entire turfgrass Industry of the United States. Happily, we can report that the commercial sod production industry is in good health and the potential and prospects frankly are unbelievable. There are problems, of course, and the industry has a growing pain here and there. But we are simply stunned by the unfolding prospects of the decade to come. Fortunately, sod producers have the leadership to march ahead without missing a step.

We are preparing a report on the Maryland convention and field days and will publish it in the September issue of WEEDS TREES and TURF.

Announcing the new Asplundh "Whisper Chipper"

Looks the same—sounds so different!

This new unit has all the dependable features of our famous chipper line. However, there is a remarkable difference — a great reduction in noise. Modification kits will be available for many existing models. **Asplundh Chipper Company, a division of Asplundh Tree Expert Co., 50 E. Hamilton Street, Chalfont, Pa. 18914**

ASPLUNDH

For More Details Circle (102) on Reply Card

The Case of the Invisible Vapor Barrier

By DONALD FOX
Thompson-Hayward Chemical Company

One mystery that has been puzzling horticulturalists and paving contractors for years is: How do you effectively protect asphalt paving from damaging weed break-through without endangering nearby ornamentals?

It's a serious problem, one that affects both new and repaving projects. Consider this all too familiar scene:

On the one hand, you have a landowner asking a contractor to renovate and repave an old parking lot. But the contractor is hesitant to apply traditional soil sterilants to control germinating weeds because they would damage or kill existing ornamentals nearby, some of them twenty years old or more and extremely valuable to the landowner.

On the other hand, the contractor — and the landowner — must consider the value of the new paving. How long will it last if the soil under it remains untreated?

It's the sort of thing that has people shaking their heads and flipping coins to decide which way to go.

But someone seems to have discovered the answer. There's a new herbicide called "CASORON®" weed and grass killer that effectively kills germinating seeds under asphalt paving . . . and yet does no harm to existing woody ornamentals when used as directed.

Casoron is dichlobenil herbicide manufactured and distributed by Thompson-Hayward Chemical Company of Kansas City, Kansas. When applied as a preemergence granular herbicide or as a spray it kills a wide range of shallow and deep-rooted annual and perennial weeds.

Included among these are many annuals, plus such perennial weeds as artemesia, Canada thistle, curly dock, fescue, leafy spurge, orchardgrass, quackgrass, Russian knapweed, timothy, wild artichoke, wild aster, wild carrot, yellow rocket, sheep sorrel and others.

Casoron formulations will not control woody growth such as small trees, brush and woody vines.

Why does it work safely next to ornamentals and other herbicides do not?

Traditional soil sterilants tend to be absorbed by a growing plant's root system and translocated to the leaves, where the "killing" action takes place. All root systems, including ornamentals, accept these chemicals, and the damaging effects are similar across the plant spectrum.

Casoron, however, works in a significantly different manner. It is a volatile chemical that quickly vaporizes after application. When applied uniformly under asphalt, this gas vapor is trapped beneath asphalt and extends down several inches into the base material.

This "vapor barrier" is the key factor. When plant tissues enter the vapor barrier, the terminal meri-

Above left: Unchecked weeds alongside this road invites more weeds, more pavement damage and more maintenance expense.

stematic tissue stops cellular division and elongation.

This vapor barrier is the key factor for the herbicide's success. In addition to being a powerful inhibitor of germination, it acts directly on the growing points and root tips, causing the terminal meristematic tissue to cease cellular division and elongation.

Therefore, when plant tissue enters the "vapor barrier," that part of the plant simply stops growing. New seeds within the treated area are killed immediately after germination, while plants growing outside the treated area refuse to enter it.

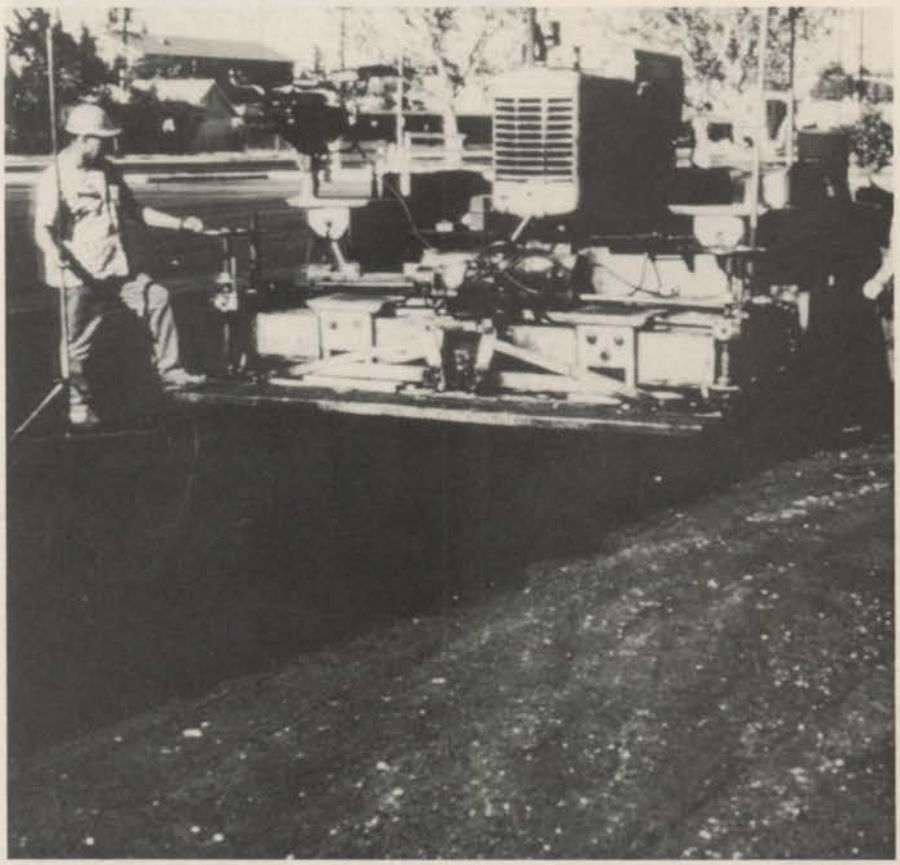
Obviously, this applies to ornamental root systems, as well. They stop growing toward the nearby treated area and protected asphalt paving. No harmful chemicals are translocated to the ornamentals.

And the asphalt paving remains absolutely unaffected by damaging root systems or growing vegetation.

For these reasons, Casoron is an ideal herbicide for under-asphalt applications bordering ornamental landscaping: parking lots, road shoulders, recreation courts, sidewalks, bicycle paths and driveways. The manufacturer also reports widespread use in non-critical (i.e., non-ornamental) areas such as roadways, reservoir walls, airport runways and industrial areas.

The effectiveness of this relatively new herbicide in controlling weed growth under asphalt can be

Just ten hours after application of the herbicide, the paving contractor for the parking lot spread a ⅛ inch oil base to seal the soil and trap the herbicide vapor barrier.



The final asphalt course was applied to the Fresno parking lot a week after the Casoron application. The manufacturer's literature suggests that the herbicide is effective for three years or longer and there has been no sign of weed break-through to date on this job. The application date was August 1972.

Lawn Medic bags it!

NITROFORM*

organic nitrogen

The easy-handling, slow-release nitrogen that gives uniform coverage in any type spreader.

HERCULES INCORPORATED

Turf and Horticultural Products, Synthetics Dept. Wilmington, Delaware 19899

*Registered trademark of Hercules Incorporated. STH74-12

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When you want accurate facts

about anti-vibration systems & about eliminating vibration in chain saws...

Ask the people who gave it to you first and who know it best! STIHL!

No other chain saw manufacturer in the world offers you more — or a greater variety of chain saws with AV anti-vibration systems.

STIHL was the first chain saw company in the world to introduce and manufacture an AV anti-vibration system on their saws – as far back as 1964 – and it has proven so reliable and popular with professional cutters, that we have had to make the AV system available in just about every saw in our line.

Our exclusive and patented AV anti-vibration system (as shown) consists of strategically positioned rubber shock absorbers mounted in the handles and body of the saw. They serve to practically eliminate vibrations from chain and engine and let you cut longer, with less effort and fatigue, and without unnecessary discomfort to your hands, arms and back.

STIHL American, Inc.
107 Bauer Drive, Oakland, N.J. 07436,

For More Details Circle (148) on Reply Card

judged by the following actual case histories:

• Casoron applied under 500,000 square feet of asphalt access roads on the Dominguez Channel in Torrance, Calif. To date, there has been no sign of road damage due to weed break-through.

• Applied to California State Highway road shoulders for Bermuda grass control prior to repaving. After 2 ½ years, the area was repaved again with no need for additional weed control measures.

• Applied to a Los Angeles County Parks and Recreation Department basketball court prior to paving. After two years, the weed control was found to be excellent. Two breaks occurred on one edge of the treated area, but the pattern indicates a skip in the application, providing a good benchmark for the actual effectiveness of the treatment.

• Applied to a 70,000 square feet hospital parking lot in Delano, Calif. To date, there nas been no sign of weed break-through.

The growing use of this herbicide under asphalt is an indicator in itself of the effectiveness and the economy of the herbicide. When properly applied under asphalt (at rates ranging from 20-24 pounds per acre for Casoron W-50 wettable powder), the cost is $295.00 per acre not including application costs. . . . substantially less than other treatments.

Hill bags it!

NITROFORM*

organic nitrogen

The slow-release organic nitrogen that's good for cool season grasses . . . warm season grasses . . . all varieties of turf.

HERCULES INCORPORATED

Turf and Horticultural Products, Synthetics Dept. Wilmington, Delaware 19899

* Registered trademark of Hercules Incorporated. STH74-7

One reason for the overall economy is the simplicity and ease of application. As a wettable powder formulation, W-50 requires only 75 to 100 gallons of water per acre and minimal agitation.

This relatively small amount of water can be a big savings, particularly in arid regions where water must be hauled from a distant source with large equipment.

To get an idea of how the herbicide should be applied, let's take a look at an actual job and follow it through, step by step.

The job was a new seven-acre asphalt parking lot at Fresno City College in Fresno, Calif. The officials at the college and their architects specified a parking lot with islands of landscape vegetation coordinated with the campus landscape.

The contractor knew that the standard borate compounds were reliable but gave little or no safety to existing vegetation. Casoron was selected for the job.

The contractors, Western Exterminators, used W-50 wettable powder applied at the rate of 20 pounds of product in 100 gallons of water per acre.

Using a truck-mounted John Bean spray rig with 6 ft. hinged spray extensions, Western Exterminators was able to develop angular spray patterns along the parking lot curbs. This allowed the operators to keep the truck on the spray path for each pass up and down the parking lot.

Temperatures were extremely high (over 100°) on the day of the application and some concern was expressed about the volatibility of the herbicide. But the contractors had planned carefully and the paving contractor was on hand the next morning, ten hours after application, to lay down a ⅛-inch oil base.

This oil base effectively sealed the herbicide application, trapping the vapor barrier until the final asphalt course was applied and rolled the following week.

This application was made in August, 1972 and there have been no signs of weed breakthrough since.

As with any other herbicide or soil sterilant, proper preparation and application are essential. With Casoron, the following steps should be observed:

• Prior to application, remove all small trees, brush and woody vines from the area to be treated. This can be accomplished by scalping the surface with a grader, blade, plow or disc. Re-compact the soil.

• Use calibrated application equipment to spread the herbicide uniformly over the entire area to be treated. Hand sprayers may be used to cover the hard-to-reach areas. Apply just prior to laying the asphalt course, or seal with a suitable oil base immediately after application.

• Do not mix Casoron formulations with asphalt primer or with the asphalt.

Specifics on the available CASORON formulations:

• G-10 is a granular formulation available in 8/16 mesh size and containing 10% active ingredient.

• G-4 is also a granular formulation available in either 8/16 or 16/30 mesh size and containing 4% active ingredient.

• W-50 is a wettable powder formulation for spraying. It contains 50% active ingredient.

With a product like this around, there's no reason for horticulturalists and paving contractors to do any more head-scratching when faced with the old question: Do we protect the paving . . . or the trees?

When the roots of an ornamental plant come into contact with the herbicide's vapor barrier, they simply stop growing in that direction, preventing damage to the asphalt covering. Since the roots will not systemically translocate or absorb the herbicide, no harm is done to the ornamental.

"Jobe's TREE FOOD SPIKES save time, labor and money."

says Delos A. Bailey, owner of Del-Mar Landscaping Service, Bloomington, Minn.

George Mann, left, and Chris Danielson, Del-Mar Landscaping Service, Bloomington, Minn., fertilize their customers' trees with Jobe's Tree Food Spikes.

"Good help is hard to get. Up here in Minneapolis we're busy both summer and winter—with snow removal a big job in the winter. Mowing, tree and shrub planting, trimming and fertilizing keep us busy in the summer. That's why we like Jobe's Tree Food Spikes for fertilizing trees. The analysis is right —*and they sure save time.* Jobe's are simple to use: just one spike per inch of trunk diameter."

You'll like Jobe's Tree Food Spikes too. They're 16-8-8 fertilizer compressed into the shape of a railroad spike. All you do is pound them into the ground; rainwater does the rest. Trees and shrubs can be fertilized *in one fourth the usual time* and about *half the normal cost.* See the table below:

Jobe's Tree Food Spikes for a 20 Ft. Tree	
Based on State University Field Tests and Recommendations	
5 spikes 16-8-8 fertilizer—24c per spike*	
1 spike per inch of trunk diameter	$1.20
5 minutes labor @ $4/hr.	.33
Labor and materials	$1.53

Call your nearby supplier or order direct—5 cases @ $30 per case/, 15 cases at $25 per case, freight prepaid.

Jobe's® TREE FOOD SPIKES

Makes tree feeding easier

462 East High St., Lexington, Ky. 40508

For More Details Circle (154) on Reply Card

Louisville Declares a Park Emergency

A group of Louisville, Ky. residents calling themselves Trees, Inc., have launched a massive effort to restore an 83-year-old park destroyed in the April 3rd tornado disaster.

Louisville, Kentucky residents are making it clear that the 90 acres of trees in their beautiful Cherokee Park, flattened by a tornado April 3, won't be down for long.

The park's nearly 400-total-acres makes it one of the largest in the nation. Planning for it began in 1891, ironically after a tornado destroyed a farm on the property in 1890 and the land was donated to the city for a park by its owners.

The current fund-drive for $1 million to replace the 2,000 trees destroyed in the park began the night following the $100 million Louisville disaster. If successful, excess money will be used to replace some of the 18,000 trees lost in various Louisville neighborhoods.

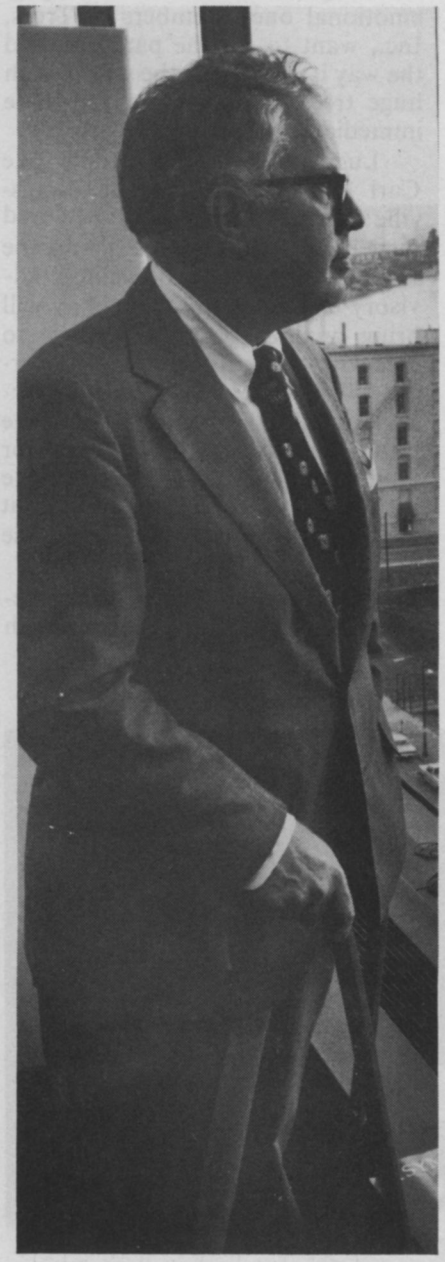
Barksdale F. Roberts, a bank vice president, recalls sitting in his home the night after the tornado listening to radio reports. It became clear to him that insurance companies and disaster agencies were taking care of the people, but nothing was being done for Cherokee Park

The next day he discussed the formation of a fund-raising agency with Louisville attorney Ed Perry and businessman Dan Byck, and the three men approached Mayor Harvey I. Sloane.

"We thought the raising of money should be kept separate from city government, and the mayor agreed," Roberts recalled in his 11th floor office of the First National Bank. With the mayor's blessing Roberts formed Trees, Inc., and assumed the presidency of the new organization. It began operation April 15.

Remnants of Cherokee Park's once beautiful trees await clean-up crews. Trees, Inc., hopes to restore the park to near-original condition.

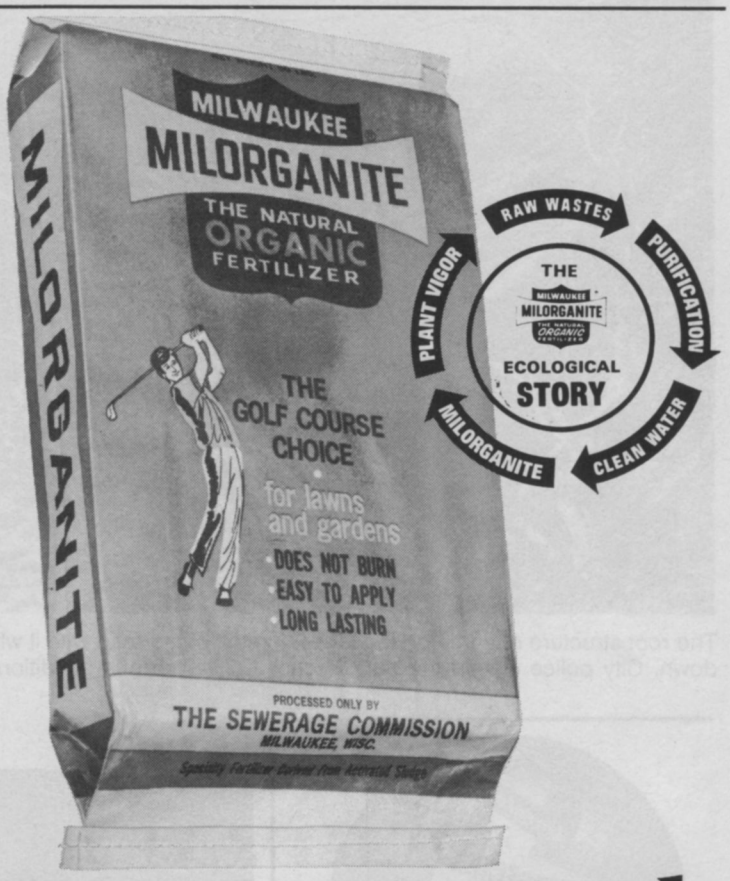
The mayor formed a restoration committee for the park, and Roberts named a member. The mayor's committee is working with a Boston city planning firm to develop recommendations for restoring the park after city work crews clear the rubble of fallen trees.



Barksdale F. Roberts, vice-president of a Louisville bank, gazes out his 11th floor office window and is reminded of the April 3 tornado disaster that led to his fund drive to restore the park's trees.

Trees, Inc., plans a nationwide campaign to attract donations of money and trees for their beloved park. The Louisville and Nashville Railroad has pledged free transportation for trees to Louisville from anywhere along its lines. (Persons wanting information about the free transportation should write Trees, Inc., 304 W. Liberty St., Room 308, Louisville 40202.)

A "Tree Train" is planned for this fall. Tentative proposals suggest the train start in Birmingham, Ala.,



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The root structure of a tree on the left took most of the road with it when it was blown down. City police closed the park because of hazardous conditions such as this.

and travel to Louisville, collecting both donated and purchased trees along the way.

The Louisville Symphony Orchestra agreed to give a benefit performance May 18, with the $5 admission fee going to Trees. The concert netted $18,176 for Trees.

One event definitely planned is a non-ball. Louisville residents will receive invitations to a ball this summer that will never happen. In lieu of attending, those invited will be asked to donate $25. The late-summer ball will be called "Gone With the Wind."

At the moment the issue of restoring Cherokee Park is a highly emotional one. Members of Trees, Inc., want to see the park restored the way it was before the storm, with huge trees, and they want it done immediately.

Luckily, there are people like Carl Ray, president of the Louisville Nurserymen Association and owner of Carl Ray Co. (landscape architects), on a professional advisory committee of Trees. Ray will bring anxious park lovers face to face with the hard realities of restoring 2,000 trees.

Ray said he plans to urge the group to purchase large trees for only the most critical portions of the park, such as around fountains or at park entrances. He will urge the use of seedlings in other areas.

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This is the way Cherokee Park looked in late March, when the last snowfall of the season made this pleasant scene. Photo courtesy of ***Louisville Courier-Journal.***

A city-wide golf tournament for teenage girls went on as scheduled at the golf course in the park, but there were new obstacles for the contestants. Pictured is one of the contestants.

Once beautiful trees were sold to the highest bidder at public auction and now await transportation by the buyers. These are only a few of the usable trees. It will be fall before all logs are cleared so replanting can begin. *(continued on page 36)*

BARTLETT

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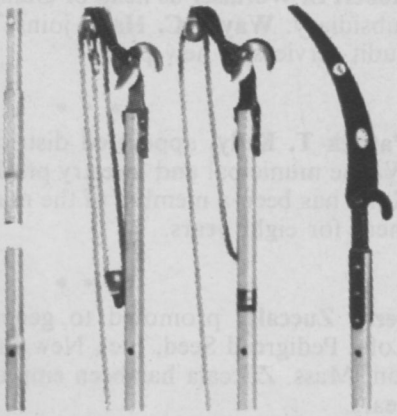

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People on the move

David T. McLaughlin, president of Toro Co., succeeds **Robert S. Wormser** as head of Game Time, Inc., a Toro subsidiary. **Wayne C. Hald,** joins Toro as manager of audit services, a new post.

* * *

Patrick T. Kelly, appointed district sales manager for Wayne municipal and forestry products in the midwest. Kelly has been a member of the municipal sales department for eight years.

* * *

Jerry Zuccala, promoted to general manager of the Lofts Pedigreed Seed, Inc., New England Div., Arlington, Mass. Zuccala has been employed by Lofts for 13 years.

* * *

Purdy A. Outhouse, named agricultural chemical sales representative for TUCO, Division of the Upjohn Co. His territory includes the New England states and New York.

* * *

Daniel P. Boyd, named director of OSHA's Office of Standards Development and **Donald V. Lassiter,** appointed special assistant for occupational health to Alexander Reis.

Albert S. Eddins, appointed national sales manager, agricultural products, Velsicol Chemical Corp. He was previously employed as area manager of the Arizona division of Wilbur Ellis Co.

* * *

Dr. Edward L. Chandler, named administrator of the Bartlett Tree Research Labs, Pineville, N.C. Chandler will be responsible for all operations of the lab, including the plant pathology, plant physiology and entomology departments.

* * *

Emre Bleier, appointed business manager, process chemicals department, for the Nopco Chemical Div. of Diamond Shamrock Chemical Co. In other company moves **Gregory K. Staff,** promoted technical sales representative, process industries department.

* * *

J. Calvin Affleck, retires as advertising manager of the pipe and plastics group of Certain-teed Products Corp., Valley Forge, Pa. Affleck has been an advertising executive at the company since 1963.

* * *

Larry Estea, named chief engineer for the new Indianapolis plant of the Hesston Corporation's Lawn Equipment Div. **Lawrence S. Ruble,** appointed field test manager and **Allen K. Lindseth,** named service manager.

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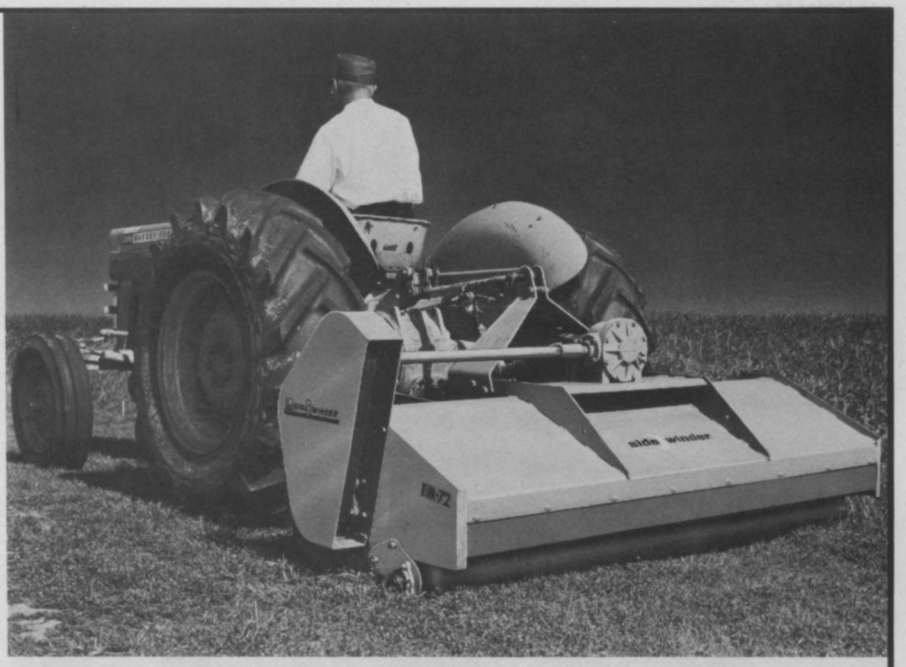

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Old Technique . . .

New Look

By RICHARD D. LOCKE
E.I. DuPont de Nemours, Inc.

Dateline, Missouri . . . Better brush control on distribution lines with savings in use of critical oil and economy in line maintenance . . . this is the big news that is emerging from the experience of electric co-ops. Maintenance engineers in this state have been fine-tuning their brush programs to get maximum return out of maintenance budgets.

A new look has been taken at a

familiar technique — basal stem application of herbicides to unwanted brush and small trees growing under lines on the right-of-way. The new look includes full use of an outside contractor and expanded use of Hyvar X-L bromacil weed killer, a water-soluble compound that needs no oil yet provides needed, durable control of a wide range of species. This compound can be used without harm to wildlife and the environment, but in addition to energy savings, it provides for an applicator improvement since there is no messy oil to permeate clothing or spray crews.

There are more than 60 electric co-ops in Missouri, but the highlights of their brush experience can be summarized through the report of a southeastern Missouri cooperative.

"Brush control has been our biggest maintenance problem," notes John B. Barker of the Ozark Border Electric Co-op in Poplar Bluff, Mo. "We have been searching for new and better ways to control root regeneration on our rights-of-way. We have needed an economical, effective program and ideally one that could be safely handled by an outside applicator, whose specialists would be up to date on new compounds. This would avoid troubles with various herbicide-oil combinations."

Right-of-way maintenance for Missouri electric co-ops is a specialty of Townsend Tree Service which has a regional base in Fredericktown, Mo., and which keeps thirty-five crews on the road most of the year, working on co-op rights-of-way. Townsend offers a variety of mechanical and chemical services to help keep brush and tree growth under control. The firm works on contract to many of the Missouri co-ops, and over the past two decades has helped to bring new brush control know-how to most of the co-ops in the state.

"The costs on brush control have been trending up," reports Jay Cheatham, a 20-year employee with Townsend. Spray oil, for example, has increased in cost by nearly 50 percent in the past few months. It has been an important ingredient and supply is now very uncertain almost at any price. But we've had some trials out on Hyvar X-L for the past couple of years. With this compound, we're getting good control of many tough species; and the costs are certainly in line."

Major tree species that Townsend crews are dealing with include oaks, elm, maple, hackberry pine, willow, persimmon, black locust, ash, sycamore, sassafras and cedar. Growth of some of these trees can be more than a nuisance in areas of Missouri where water supply is plentiful and temperatures are moderate. A sycamore tree, for example, can add six to eight feet of growth in a year. An oak will grow up to five feet, and a willow will easily add eight feet. Uncontrolled, a tree will soon invade air space around a distribution line. This spells trouble for any co-op maintenance engineer with a heavy population of brush and trees beneath his distribution lines.

Mechanical cutting of brush along fence line is a slow two-man operation — one man cutting, the other handling cut brush.

Ozark Border Electric, one of the largest electric co-ops in the state, has about 18,000 members today and new members are coming in at a steady rate — about 100 per month. But this co-op also has a big potential problem with brush and small trees on their 30-foot rights-of-way; nearly 2,000 miles of line on their 3,800-mile system — 60 percent — are "brush miles". Here Ozark and maintenance engineer John B. Barker focus their attention and energies to achieve economic control of vegetation.

"We aim to get over our system every five years," says Barker. "If we have to go back on some lines in three years, our manpower costs are too high. We have used every brush control idea we could find, including ground and air application of chemicals, mechanical cutting and so on. A sound brush program does not depend on a single approach, but on a blend of ideas that meet specific vegetation control needs."

Ozark has employed a four-man crew year-round to concentrate on brush control. During the summer, these men have been the nucleus of as many as seven crews handling cutting and spraying. But Ozark has also been looking at the help it can get from an outside tree firm.

In 1973 Townsend Tree Service crews handled close to a hundred miles of distribution line maintenance for Ozark. This year, they are likely to be doing more.

"We have tried to build confidence

On left: Basal stem treatment by Townsend Tree Service crewman involves application of "Hyvar" X-L to tree trunks four inches in diameter or less. Bottom 18 inches is sprayed.

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For More Details Circle (139) on Reply Card

in our handling of tree and brush control with the electric co-ops," comments Jay Cheatham, area supervisor and salesman for Townsend Tree. "We start carefully with a new chemical like Hyvar X-L. In 1971 we began to use it on some fence rows, under co-op distribution lines where there were crops nearby, yet where we could be sure to avoid any washing. The control was excellent when we used the basal stem application technique. We have avoided regrowth."

The same approach has been followed by John Barker's crews at Ozark Electric: "We have used X-L for spot spraying of oak, willows and elm — our quick re-growth species. We have also used it on some line spraying. In 1973 we were in our second year of experience. How to use any chemical is a vital element in brush control. You must learn what it will do before expanding use," concludes Barker, who has 28 years of service with Ozark.

The basal stem treatment season is somewhat longer than that for foliage-treatment. Townsend crews have found they can spray for as much as eight months out of the year. Spraying is handled by any member of a Townsend four-man crew. But a foreman in this crew is likely to have up to 15 years experience, and Townsend people are constantly getting added training, oriented to safety and environmental concerns.

During trimming periods, crews are cautioned about the application of Hyvar X-L to areas containing roots of valuable trees that are growing adjacent to the right-of-way. This product is a potent tree killer and injury may result if crews do not exercise caution.

During the first year with the bromacil compound, one Townsend crew did most of the basal stem spraying. Standard practice has been to mix 3 gallons in 100 gallons of water and then apply one to two fluid ounces per tree stem that is 2 to 4 inches in basal diameter. The base of the tree should be wet to runoff. Last year, three crews were using it steadily, on distribution lines in Missouri, with some spot spraying by others. By next year Jay Cheatham hopes to extend the use of this material, as he develops added knowledge of its characteristics.

"We should get longer, more economical control plus some energy savings as we learn more about X-L," says Cheatham. "The basal spray technique looks very promising for precision control of troublesome trees and brush, under fence-row distribution lines. We have had no re-sprouts on trees treated in 1971, indicating good control of roots of species that are always stimulated by mechanical cutting.

Using the basal stem technique, a single tree and brush crew can apply up to 400 gallons in a day, along electric distribution lines, according to Cheatham. That covers up to five acres and is usually equivalent to almost two brush miles of line. Costs will naturally be variable, depending on brush and tree population. One co-op indicates that a figure of about $60 per acre or $216 per brush mile was about average in their experience, but in some areas the cost was a good deal higher.

The shift from co-op crews to outside contractor crews holds promise for better line maintenance in cases where engineers and managers have needed more flexibility in scheduling brush control work. Outside contractors have been able to focus their attention on new, economical ideas. They have worked to keep up to the minute on these ideas. And they are able to funnel new technology to control brush and trees without repetitive start-up delays and with assurance of environmental protection. Specialized service like this can help maintenance engineers keep their budgets down — and in these days of energy shortages, the proper use of bromacil weed and brush compound delivers oil savings as well! That's a nice kind of a dividend for anyone in the utility field. □

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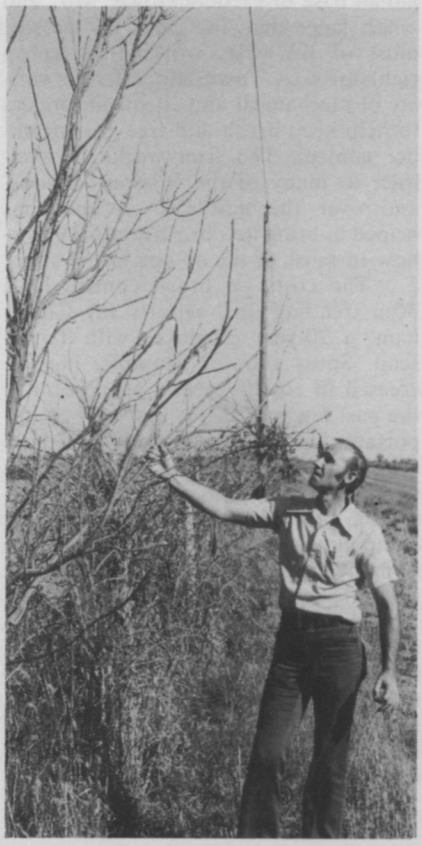

Tree solution on fence-line right-of-way is seen in this 20-foot black locust tree. It received basal stem application of "Hyvar" X-L in 1971. Early fall check in 1973 shows no regrowth.

For More Details Circle (126) on Reply Card

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For More Details Circle (112) on Reply Card

Plastic Netting — Continuing Research

COMMERCIAL SOD growers in Delaware are now being shown a remarkable new production system which promises to cut growing time from two years to a year or less. The system, which uses plastic netting as a sod base, was developed by Dr. William H. Mitchell, extension agronomist at the University of Delaware.

The normal sod production cycle in the Delaware area requires about two years — from initial seeding through establishment phases and finally to lifting and reseeding. In many cases, says Mitchell, turf grasses will be attractive and marketable in a period of six months. But they can't be lifted until a year or more later because of sod weakness. It is costly to maintain sod fields for this additional growing time. In fact, this factor has much to do with limiting the sod market to people and organizations with higher incomes.

There's another problem that goes along with traditional sod production techniques. This is the loss of topsoil. Removal of topsoil is inevitable in sod development. With its loss the producer is faced with progressively declining productivity of his fields and higher operating costs.

Mitchell has been experimenting with a system which helps shorten the production cycle at the same time it reduces topsoil loss. His system involves the use of plastic netting as a sod base. The netting makes harvests possible within months of seeding by providing the necessary tear strength for new sod. It also permits sod removal with considerably less topsoil.

Two types of netting are being tested. The first — VEXAR — is a product of the Film Department of E. I. DuPont de Nemours and Company. The other — DELNET — is manufactured by the New Enterprise Department of Hercules, Inc. Both materials have proven quite effective in field tests so far.

Mitchell has developed a very efficient technique that permits growers to lay netting and plant turf seed in one simple rototiller opera-

(continued on page 30)

Plastic netting functions as a reinforcing member in a sod sample. Some six-month-old sod was tested to a pull strength of 200 pounds when grown with netting.

Dr. William Mitchell (left), extension agronomist at the University of Delaware, places netting-reinforced sod on a machine designed to test the pull strength of sod.

meeting dates

International Shade Tree Conference, Golden Anniversary meeting, Atlanta, Ga., Aug. 18-23.

Ohio Nurserymen's Association, Sawmill Creek Lodge, Huron, O., Aug. 21-23.

National Hardware Show, 29th annual show, New York Coliseum, New York, N.Y., Aug. 25-29.

Professional Grounds Maintenance Society Conference, annual meeting, Crown Center Hotel, Kansas City, Mo., Sept. 4-6.

International Plant Propagators' Society, Western Region, 15th annual meeting, Mission Bay area, San Diego, Calif., Sept. 4-6.

Northern Michigan Turfgrass Field Day, Traverse City Country Club, Traverse City, Mich., Sept. 10.

Turf and Landscape Day, Ohio Agricultural Research and Development Center, Wooster, O., Sept. 10.

Lawn and Garden Distributors Association Convention, annual meeting, Fairmon-Roosevelt Hotel, New Orleans, La., Sept. 11-12.

Florida Turf-Grass Association, combined conference and show, Curtis Hixson Convention Center and Riverside Hilton, Tampa, Fla., Sept. 16-19.

Midwest Agricultural Chemicals Association, annual meeting, Four Seasons, Lake Ozark, Mo., Sept. 17-19.

Virginia Tech Field Days, Turf Research Center, Blacksburg, Va., Sept. 18-19.

International Pesticide Applicators Association, Seattle, Wash., Sept. 18-21.

American Association of Botanical Gardens and Arboreta, annual meeting, Sheraton Hotel, Boston, Mass., Oct. 4-8.

New Jersey Golf Course Superintendents Association, turfgrass supplies and equipment field day, Montclair Golf Club, West Orange, N.J., Oct. 7.

National Institute of Parks and Grounds Maintenance, fourth annual meeting, Pittsburgh Hilton, Pittsburgh, Pa., Oct. 7-10.

Southwest Turfgrass Conference, New Mexico State University, Las Cruces, N. Mex., Oct. 10-11.

American Horticultural Society Congress, Washington, D.C., Oct. 10-12.

Southern California Turfgrass Council, 14th annual exposition, Orange County Fairgrounds, Costa Mesa, Calif., Oct. 23-24.

Central Plains Turfgrass Conference, K-State Union, Kansas State University, Manhattan, Kans., Oct. 23-25.

New Jersey Turfgrass Expo '74, educational conference and trade show, Sheraton Poste Inn, Cherry Hill, N.J., Dec. 2-5.

Ohio Turfgrass Conference and Show, Ohio State University, Columbus, Oh., Dec. 3-5.

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insect report

TURF INSECTS

BANKS GRASS MITE
(Oligonychus pratensis)

NEW MEXICO: This spider mite and *Dolichotetranychus summersi* taken from Bermuda grass near Malaga, Eddy County, where grass almost white from severe feeding.

BLUEGRASS BILLBUG
(Sphenophorus parvulus)

NEBRASKA: Damage to bluegrass lawns appeared statewide. In Lincoln and Omaha areas (Douglas and Lancaster Counties) larvae ranged 0-40, average ranged 10-18, per square foot in infested areas with about 50 percent of larvae pupated.

GRASSHOPPERS

KENTUCKY: Adults and nymphs averaged 260 per 100 sweeps in Larue County, 430 in Warren County in roadside grasses, mostly fescue.

SKIPPER
(Thymelicus lineola)

MICHIGAN: Larvae common and damaging grass hayfields in Chippewa County. Heavy in wet areas and areas of sparse stand, where up to 4-5 per timothy plant noted. Heavily infested areas in some fields treated and some fields suffered losses. Larvae observed feeding in old hayfields and fence rows, and migrating into corn at Presque Isle, Presque Isle County. Also observed at Alpena, Alpena County, in small grains and grasses. Larvae about full grown, pupation expected soon. Only one generation occurs per year.

BENEFICIAL INSECTS

LADY BETTLES

KANSAS: Scarce in southwest district sorghum fields; few found in north-central district. In sorghum heavily infested with *Rhopalosiphum maidis* (corn leaf aphid) in Riley County, *Hippodamia convergens* (convergent lady beetle) averaged 2 adults, 2 larvae, and 0.5 egg mass per plant. OKLAHOMA: Lady beetles, mainly *H. convergens*, averaged 10,596 per acre in Tillman County cotton.

TREE INSECTS

JACK PINE BUDWORM
(Choristoneura pinus)

MICHIGAN: Moderate to heavy on pines in Clare County; infestations heavier than for past 10 years. Most larvae pupated. Adult emergence underway in Lake County.

SPRUCE BUDWORM
(Choristoneura fumiferana)

NEW HAMPSHIRE: General emergence underway. Adults taken throughout southern area at lights.

FRUITTREE LEAFROLLER
(Archips argyrospilus)

CALIFORNIA: Heavy larval populations defoliated native buckeye trees at Bakersfield, Kern County. This is first season this occurred.

ELM LEAF BEETLE
(Pyrrhalta luteola)

CALIFORNIA: Heavy populations infested elm trees at location in Dixon, Solano County. OKLAHOMA: Heavy defoliation of elms noted in several counties.

WOOLLY ELM APHID
(Eriosoma ulmi)

NEVADA: Very light and scattered on elms in Reno, Washoe County. This is a new State record.

For More Details Circle (103) on Reply Card

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One insecticide that controls a whole host of harmful insects.

®SYSTOX

systemic insecticide

Foliar spray gets sucking insects hiding on underside of leaves by means of systemic activity.

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®DEXON

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Dependable carbamate insecticide controls turf insects which have become resistant to chlorinated hydrocarbon pesticides.

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For Land's Sake

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NETTING *(from page 26)*

tion. The technique is especially efficient since it takes advantage of the way in which soil is thrown back during normal operation of the rototiller. So simple is the whole setup that it requires a single pass over a field — thus cutting down on both labor and fuel costs.

Last fall Mitchell demonstrated his system on an acre of land at the Sandtown farm of Bill Colemen, a Delaware sod producer. Sod on that acre is now well established and ready for harvest. Samples of the six-month-old sod have tested to a pull strength of up to 200 pounds. Two-year-old sod without netting often has a test strength of 75 pounds or less.

The agronomist says there's still work to be done to perfect the new system. The economic advantages for sod production with plastic netting have to be more exactly established, for one thing. There are a lot of factors to consider—cost of netting, land value, time required to complete the sod production cycle and percentage of recovery of salable sod.

But it looks now as though the system can double sod production by cutting growing time in half. And this is a powerful argument in its favor. It's no wonder that Mitchell is starting to get requests from other area sod growers to demonstrate the new technique on their farms, too.

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Princeton Manufacturing Company builds three basic models of sod harvesters which cut and palletize sod in one operation. The most recently developed model is designed with maximum flotation to permit operation in extremely soft conditions.

New Sod Harvesters Meet Need

The Princeton Sod Harvester had its origin at Princeton Turf Farms of Hightstown, New Jersey, where Wiley Miner worked extensively to create a much-needed mechanized method of cutting and palletizing sod in one operation. From that beginning, in cooperation with Miner, the harvester was further developed and modified by the owners of Eastside Nursery, Inc., of Canal Winchester, Ohio. In August of 1972, the principals of these two sod-producing firms, with Syl Schloesser as manager, formed Princeton Manufacturing Co. The new Company operated initially at Canal Winchester, Ohio.

Harvesters have since been built and sold to volume-producing sod growers throughout the U.S. The company has offered remodeling services to purchasers of the originally-designed harvesters as well as new models designed to meet the individual needs of these customers. The harvesters have been so well accepted that expansion of the manufacturing facility has been necessary. The plant and offices are now located at 2625 Johnstown Road, in Columbus, O. Its location, adjacent to Port Columbus, provides excellent shipment facilities for servicing the needs of the customers.

The company builds three basic models. The model No. 4816 is designed to produce 16" wide sod, where vegetative regrowth is required, or where weight due to thickness of cut or sand conditions require small pieces for handling. The model No. 4020, designed as a new 'standard' in mineral soil sod production, cuts 20" wide slabs, 40" long. The 40" square pallets enable maximum yardage to be trucked per weight and width restrictions in most states.

The company's latest development has been their model No. 4824 harvester which is designed with maximum flotation, to enable operation in extremely soft conditions, such as peat or muck soil. It cuts 24" by 48" slabs and permits palletizing of 100 yard pallets.

All current models include 'counting' devices to create uniform pallets as well as an automatic weighing system to assist in permitting maximum trucking efficiency. Flotation tires prevent damage to uncut sod on this harvester which is designed for the sole purpose of producing palletized sod.

The company intends to remain cognizant of the needs of the Sod Industry and is working not only on new and better ways of sod harvesting but on additional allied equipment for the industry, also.

industry news and newsmakers

MALCOLM W. MOON

Upjohn Research Chemist Named Senior Scientist

Dr. Malcolm W. Moon has recently been recognized for his outstanding work in the synthesis of agricultural chemicals through appointment as senior scientist at The Upjohn Company. Moon will be the lead chemist in research on herbicides and plant growth regulators.

Since joining Upjohn in 1965, Moon has been instrumental in the synthesis of herbicide, fungicide, insecticide and miticide materials. His efforts have resulted in the preparation and testing of more than 1,100 new materials.

Moon has authored or co-authored 19 major reports and publications. Through his work with the company, eight U.S. patents have been issued and 12 patent applications are being considered.

A native of England, Moon, his wife Pauline and their three children now live in Kalamazoo, Mich.

Ryan Announces Move

The engineering department of Ryan Turf Care Equipment has been transferred from St. Paul, Minn. to Lincoln, Neb.

Keith Rhodes, engineering manager for turf products, said the move enables his department to improve coordination of activities with Ryan marketing and service departments in Lincoln.

International Pesticide Applicators Plan Annual Convention in Seattle

September 18 to 21 will find over 100 people from the Green Industry gathering at the Hilton Hotel in downtown Seattle, Wash., for the annual International Pesticide Applicators (IPA) convention.

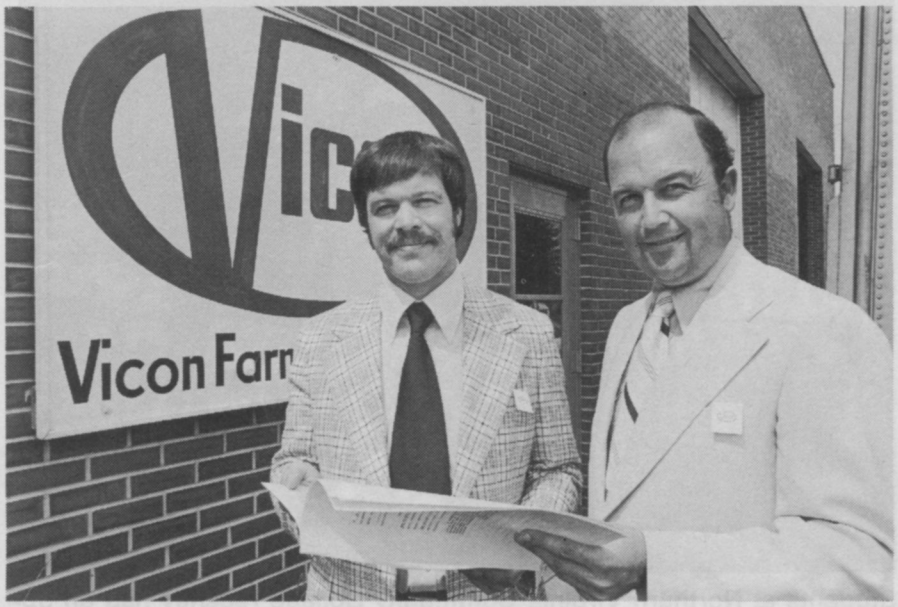
Representatives from the International Shade Tree Conference, golf course superintendents, various pest control groups, mosquito abatement and vector control specialists, tree farm and Green Industry service groups along with suppliers, manufacturers, tool and equipment companies will be there.

The agenda was planned by Rod Fairbanks, convention chairman and Washington Chapter president, and his committee. Highlights on the program are seminars on aquatic weed control and a two-day clinic on insect identification and control, moderated by Dean Jamieson, vector control specialist from San Jose, Calif.

A program devoted to turf disease and insect control is also included. Ray Goss, of Washington State University, will head up this portion of the program. Bill Owen, of General Spray Service, Portland, Ore., will cover the field of application techniques.

Other subjects which will prove of interest and value to the delegates are telephone sales techniques, public relations in the Green Industry, personnel administration, human behavior and time management. One session will be devoted to preventive maintenance of equipment.

The ladies can attend programs on cosmetic application, dress styles, poise and modeling, by specialists from Seattle firms. Also, business specialists will cover a wide range of information regarding a wife's role in relation to her husband's business. The ladies will



Dennis Schwitters (left), president of Vicon Farm Machinery, Inc., Norfolk, Va., checks an agreement with P. Hunter Cox, Jr., Industrial development director for the city of Chesapeake, Va., in which Vicon announced moving its U.S. headquarters to Chesapeake. Vicon purchased a 4-acre tract and will build a 12,000 square foot office-warehouse. Vicon, which has been operating in Norfolk since 1971 as the North American sales and distribution headquarters for Vicon NV of Holland, is studying the possibility of partial manufacture and final assembly of fertilizer spreaders at the new site. Vicon is the world's largest manufacturer of fertilizer spreaders, Schwitters said.

enjoy a luncheon 600 feet in the air at Seattle's Space Needle. Capping the ladies' program will be a speaker covering the topic, "Never Underestimate the Power of a Woman," which will be presented to the entire assembly.

Cost of the convention will be $52 per couple for members, and $82 for non members. This registration fee covers the cost of two main banquet tickets, two luncheon tickets, a tour of Seattle and convention material. Single registrations are $30 for members and $60 for non members. Non members can apply the extra cost of registration to a membership in the IPA. Single registrations also include the cost of their registration, banquet and tour.

Registration chairman is Bill Gildroy, Cascade Spray Service, Lake Stevens, Wash., 98258. Registration cards are available from Gildroy or through the IPA office at 1000 Aurora Ave. N., Seattle, Wash., 98109.

The first 100 registrations received will be included in a drawing for free hotel accommodations. Families are invited to travel to Spokane to visit Expo '74 before or after the convention.

Musser Golf Tournament Supports Turf Research

The first Stroke Play Invitational Tournament — first in what is hoped will be a long series of amateur tournaments for the benefit of the Musser International Turfgrass Foundation — was held in June at the Sharon Golf Club, Sharon Center, O. Proceeds will go to the Turfgrass Foundation to support graduate studies at leading turf research stations.

Ninety players completed the 18 holes. One player, W. Scott Lamb, flew from Oregon to participate. Half of each $30 fee, which covered practice balls, golf carts and a buffet lunch, was given to the Foundation.

Two Foundation officials attended the event — Dr. Fred V. Grau, president and one of the incorporators, and William E. Lyons, a director.

Henry Meiers, executive secretary of the Cleveland District Golf Association which arranged and conducted the tournament, said it will become an annual event. It is anticipated that other golf clubs will follow suit with the backing of their respective golf associations. These benefit tournaments will give the average golfer a chance to contribute to turf improvement, to play fine courses and to have fun in the process.

Students at Northern Virginia Community College recently had an opportunity to participate in a turf management course designed to provide intern-type experience in association with recognized professionals. Under the direction of Larry Smith and Jerry Moore, the course featured on-site examinations of management problems and career-related discussions of turf as a business. Site for off-campus classes included a Remington, Va. sod farm, the Antietam Battlefield Park, Arlington National Cemetery and the Washington Golf and Country Club. At each class, the students were able to learn about turf management firsthand from resident experts who described and displayed their activities in turf management.

Growing Arizona Market Met by Oxychem Expansion

Occidental Chemical Company (Oxychem) has leased a 20,000 square foot warehouse in Phoenix, Ariz., according to Jack Edminster, manager of the Consumer Products Division.

Consumer product distribution for the entire state of Arizona will be handled from the new facility which will receive shipments from Oxychem's headquarters in Lathrop, Calif.

According to Edminster, the Arizona consumer market is rapidly expanding, and Phoenix is one of the fastest growing areas in the nation with no sign of slowing in the foreseeable future. The garden industry has also been sparked by a vigorous interest in outdoor and indoor home gardening inspired by the fuel shortage and rising food costs, he said.

Oxychem, founded in 1932 as the Best Fertilizers Company, is a division of Occidental Petroleum Corporation. It manufactures, formulates and distributes plant foods and pest controls under the "Best" label throughout the western U.S. including Hawaii.

Best Fertilizers of Arizona, Inc., another Oxychem company, has served the agricultural fertilizer and chemicals market in central Arizona for more than 20 years.

Slow Release Chemicals Subject of Symposium

A Controlled Release Pesticides Symposium, the first of its kind to deal with the emerging technology of slow release pest control formulations, is scheduled from September 16 to 18 at The University of Akron, Akron, O.

Scientists and engineers from the university community, U.S. and foreign governmental agencies, private institutions and industry who are working with slow release formulations will be present to help span the communications gap in this area.

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Some concurrent sessions to be included in the program are: slow release insecticides, insect repellents and insect attractants; slow release molluscicides and molluscicidal baits; and slow release herbicides.

Many papers will be presented, and a number of open panel discussions or workshops are planned. These meetings will be keyed to the discussion of pest control problem areas and the potential use of slow release materials in their solution.

The registration fee, which will include a banquet on September 17 and a copy of the proceedings, is $20 in advance, $25 at the door.

For further information and registration material, contact Nate Cardarelli, Engineering and Science Division, The University of Akron, Akron, O., 44325.

Barnett Named President

Robert P. Barnett was elected president and chief operating officer of ICI United States Inc., succeeding Edward J. Goett who became board chairman and remains its chief executive officer.

ICI United States is the new name of ICI America, the U.S. operating subsidiary of Imperial Chemical Industries Limited (ICI) of London, England. The company has plants in 11 states and in other countries. Its product line includes textile chemicals and dyes, plastics, agricultural chemicals and aerospace components.

Outdoor Pest Services Offered to Green Industry

Most Green Industry members engaged in some aspect of restricted use pesticides are beginning to feel the pressure of an aware public and an even more aware government. The amended Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) will include all industry users of restricted use pesticides.

The National Pest Control Association (NPCA) has developed an "Outdoor Pest Services" program to serve as an additional source of information for industry members falling under jurisdiction of amended FIFRA.

Outdoor Pest Services includes:

1. lawn services (insect control, disease control, nutrient management)
2. ornamental plant and tree service (insect control, disease control, nutrient management)
3. weed control (selective, nonselective, brush control)
4. growth regulation (lawns, ornamentals, trees, other)
5. maintenance (lawns, ornamentals, trees, other)

National Pest Control Association is the only national trade association serving the structural pest control industry. NPCA activities include: providing up-to-date and practical information in the technical, management and training areas, representation of industry interests before many federal and state regulatory agencies and consumer oriented public relations programs.

NPCA's new Outdoor Pest Services will:

- provide technical and operational information to NPCA members now engaged in outdoor pest services.
- provide NPCA members not currently doing outdoor work with necessary guidance needed to branch out into this new market.
- broaden NPCA scope of service by attracting lawn care companies, arborists, turfgrass managers and superintendents and companies in related fields on a subscription basis for NPCA "Outdoor Pest Services" material.

Currently 38% of NPCA members offer some form of outdoor pest control service. Two hundred and fifty member companies now do lawn work. NPCA will initially focus its attention on lawn services due to member concentration in this area.

NPCA offers companies that do not do structural pest control, but are engaged in lawn care, landscaping, turfgrass management and related areas, a $95 per year subscription service. For this fee, subscribers get:

1. legislative information: regular reporting to keep the subscriber abreast of federal activities significant to outdoor pest services.
2. a frequent association affairs newsletter.
3. management reports: general information on effective ways to manage your business.
4. Outdoor Pest Services technical releases: reports on new pesticides, new equipment and techniques which affect commercial outdoor application.
5. all other NPCA technical and management manuals will be available at non-member prices.

NPCA members will get Outdoor Pest Service materials as part of their current dues. Companies engaged in structural pest control which are not now NPCA members must apply for regular NPCA membership to receive outdoor pest service information.

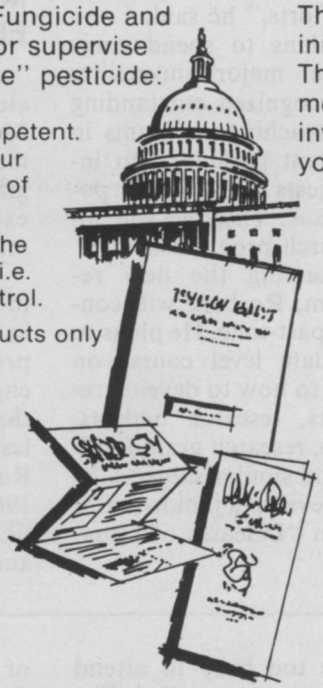
Jay S. Angle (right) of Towson, Md., receives a scholarship certificate and a handshake from his faculty advisor, Dr. John R. Hall, extension turfgrass management specialist at the University of Maryland in College Park, Md. Hall is the secretary of the Maryland Turfgrass Association, Inc., which recently presented the scholarship to Angle who will be a College of Agriculture senior this fall.

green industry

did you know?

That under EPA's rules of the amended FIFRA (Federal Insecticide, Fungicide and Rodenticide Act) if you use or supervise the use of any "restricted use" pesticide:

- You must be certified as competent. Can you pass an exam on your knowledge of the proper use of "restricted use" pesticides?
- You will be examined under the category of work performed. i.e. ornamental and turf pest control.
- You must use pesticide products only as labelled.



NPCA can help!

Here's what we're doing — — The National Pest Control Association has initiated a new *Outdoor Pest Services* program. The materials developed are now available to members of the green industry who are not involved in structural pest control. As a subscriber you will receive:

- Legislative information service—keep you up-to-date on governmental decisions, rules and regulations affecting you.
- Latest outdoor pest services technical information—reports on new methods of chemical application, equipment, new disease and insect infestations and other technical topics.
- Consultation on outdoor pest services problems with NPCA's staff.
- Management aids and reports to help your business operate more efficiently and safely.
- And much more!

Here's all you have to do to subscribe

- Fill out the attached coupon
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I would like to subscribe to NPCA's Outdoor Pest Services program. understand that this does not entitle me to NPCA membership and that I cannot display the NPCA logo. All NPCA materials and manuals other than outdoor pest services will be available at non-member rates. Enclosed is my check for $95.00.

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*Anyone subscribing after September 1, 1974 will receive all back issues of releases, reports and newsletters.

**Structural pest control companies which are not members of NPCA, which do outdoor pest work are not eligible for this program unless they join NPCA as regular members.

Diseases of Ornamentals Subject of Texas Research

A new project to initiate a program of research on diseases of ornamental plants will be getting underway later this year by a Texas Agricultural Experiment Station (TAES) scientist.

Dr. David W. Rosberg, professor and head of the Department of Plant Sciences at Texas A&M University for the past 14 years, will relinquish his responsibilities as department head and devote full time to TAES research and teaching.

"Research on ornamental plant diseases is sorely needed to find answers to some of the difficult plant disease problems that face homeowners and the ornamentals industry," Rosberg said. "The nursery industry in Texas is valued in excess of $25 million. A research plant pathologist working on ornamentals could make an important contribution by working in close cooperation with nurserymen," he said.

Rosberg, presently employed by the university, Experiment Station and the Texas Agricultural Extension Service, said two Extension plant pathologists are currently devoting full time to educational work on diseases of ornamentals in Texas.

"But an active research program in ornamental plant pathology is vital to the welfare of the Texas nursery industry, and to provide important data for the present educational efforts," he said.

Rosberg plans to spend some time at several major universities which have recognized outstanding research and teaching programs in ornamental plant pathology to investigate projects that have potential for Texas. Then he will initiate his research program here.

Besides starting the new research program, Rosberg will continue to teach part-time. He plans to teach a graduate level course on topics relating to how to develop research projects, research budgets, grantsmanship, research grant funding agencies and similar subjects. he also plans to develop a junior-senior level course on "Diseases of Ornamental Plants."

Seed Executive Retires

W. R. (Bill) Herron, vice president of the Stanford Seed Company since 1965, announced his retirement from the business effective July 1, 1974. Herron served nearly 50 years in the seed industry.

Mitts and Merrill Elect new President

Jack W. Ranous was recently elected president of Mitts and Merrill, Inc., Saginaw, Michigan manufacturer of machine tools and grinders. Ranous was previously exexutive vice president and general manager of the firm.

Ranous joined Mitts and Merrill in 1940 as a machine tool operator in the shop. Four years later he was promoted to draftsman in the engineering department. He served that department for 17 years, the last five years as chief engineer. Ranous was named sales manager in 1961 and served in that capacity until his appointment as vice president and general manager in 1968.

LOUISVILLE *(from page 19)*
2,000 newly planted, six to 12-inch trees, Ray said.

Ray is the main nurseryman involved with Trees, Inc., at present. Others haven't been called in because they are too busy restoring vegetation around damaged homes, and because the present task of Trees is being directed by persons skilled at fund raising. Once the money is available, Ray's advisory committee will assume leadership of the restoration.

Roberts said Trees won't be ready to plant until this fall, but when the time comes to place orders, another shock awaits the group. Ray said he and most other Louisville nurserymen have a tremendous backlog of orders generated by the tornado. It will take Ray almost two years to fill orders now on hand.

"There's been an explosion (of orders). Many of the residential areas included the more expensive homes, and owners are acting quickly to place large orders, because they can afford it," Ray said.

Ray's nurserymen association tried to have a meeting to plan how they would meet the disaster, but members were too busy to attend and the meeting was cancelled. The group has not met since 18 tornadoes raked Kentucky April 3.

"I've had two half-Sundays off since it hit," Ray said nearly six weeks after the storms.

Roberts said he is confident of reaching the $1 million goal. The frustration in doing that is trying to organize Trees, Inc., while appealing to the public before the tornado fades in memory, he said.

The Courier-Journal and Times Co., which publishes the two local newspapers, will donate one-third of the profits from a special book called "Tornado" it has published.

There will also be marches door to door by mothers and by school-age youngsters to collect money for the effort, Roberts said.

Roberts expressed hope that the federal government would pay for all the trees needed, but a bill recently passed by Congress seems to contain some contrary red tape. While it lists exact amounts of money that can be paid for other forms of tornado relief aid, it only gives "assurance" that park restoration money will be available. And it says cities "may seek" a grant for 100 percent of the park restoration cost, but does not state that the money will definitely be available. For "public facilities" other than parks, the bill pays only $25,000 in repairs.

Roberts hopes the park can be restored with the same types of trees that were destroyed, but said he'll accept donations of "any tree that can survive city pollution." Types of trees in the park included poplar, oaks, Kentucky coffee trees, beech and sycamore. There is a controversy among Trees members about sycamores. Some argue that the trees are "too messy," but Roberts contends they withstood the tornado better than most types. Fewer of them were blown out of the ground.

Ray said he feels most of the trees will have to be purchased, because few nurserymen can afford outright donations, although most want to help restore the park and civic pride.

All citizens of Louisville are responding to the need to restore the park, and thousands of dollars have been received through small contributions mailed to Trees. They seem determined that the park which was born by a tornado disaster, shall not die by one.

1974 Turf Protection Di

Professional management is tied closely with planning and realistic budgets. Whatever your business, it is necessary to plan for the future. This includes detailing what environmental chemicals are needed to more completely keep turfgrass and other vegetation free of pests.

It also means keeping abreast of new developments in this ever-expanding field. For these reasons, WEEDS TREES AND TURF Magazine presents this chemical guide for Green Industry managers.

Chemical manufacturers are listed two ways, product groupings and companies manufacturing products within the group and name of the company and products manufactured. Because new products and product lines are constantly changing, omissions of manufacturers and/or products are unavoidable. Your comments and suggestions are invited to help improve future editions.

KEY TO SYMBOLS: Manufacturer (M); Formulator (F); Distributor (D); Grower-Producer (GP).

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Kennecott Copper Corp. (M)
3M Company,
New Business Ventures Div. (M)
Phelps-Dodge Refining Corp. (M)
Ralston Purina Company (M)

FUNGICIDES

PROTECTANT

J. & L. Adikes, Inc. (F,D)
Agway, Inc. (D)
Chemagro Div. of Baychem Corp. (M)
Chevron Chemical Co. (M)
W. A. Cleary Corp. (M)
Diamond Shamrock Chemical Co. (M)
E. I. DuPont de Nemours & Co., Inc. (M)
Elanco Products Company (M)
Freers Elm Arrester (M)
FMC Corporation, Agri. Chem. Div. (M)
Faesy & Besthoff, Inc. (M)
Foamspray Chemicals, Inc. (F,D)
Great Lakes Chemical Corp. (M)
Lakeshore Equipment & Supply (D)
Lebanon Chemical Corp. (F)
Mallinckrodt Inc. (M)
Merck Chemical Division (M)
Miller Chemical & Fertilizer Corp. (F,D)
Olin Corporation (M)
Phelps-Dodge Refining Corp. (M)
Rhodia Inc., Chipman Div. (M)
Rockland Chemical Co., Inc. (F)
Rohm-Haas Co. (M)
The O. M. Scott & Sons Co. (M)
Thompson-Hayward Chemical Co. (M)
Tuco, Div. of Upjohn Co. (M)
USS Agri-Chemicals, Div. USS Steel Corp. (D)

SYSTEMIC

Agway, Inc. (D)
W. A. Cleary Corp. (M)
E. I. DuPont de Nemours & Co., Inc. (M)
Lakeshore Equipment & Supply (D)
Lowden (M)
Mallinckrodt Inc. (M)
J. J. Mauget Co. (D)
Merck Chemical Division (M)

EROSION CONTROL

American Excelsior Co. (M)
Conwed Corporation (M)
Grass Growers, Inc. (M)
Greenlife Products Co., Inc. (M)
Hydro-Turf (F)
Masonite Corporation (M)
Miracle Bark, Inc. (M)
Premier Brands, Inc., Premier Peat Moss Corp. (M)
Weyerhaeuser Company (M)

HERBICIDES

ABATEMENT

Amchem Products, Inc. (M)
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Ciba-Geigy Corporation (M)
Dow Chemical U.S.A. (M)
E. I. DuPont de Nemours & Co., Inc. (M)
Elanco Products Company (M)
FMC Corporation, Agri. Chem. Div. (M)
Mallinckrodt, Inc. (M)
Monsanto Company (M)
Pennwalt Corporation, Agchem-Decco Div. (M)
Rhodia Inc., Chipman Div. (M)
U. S. Borax & Chemical Corp. (M)
Velsicol Chemical Corporation (M)

BAREGROUND

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Asplundh Tree Expert Co. (F)
The R. H. Bogle Company (F)
Ciba-Geigy Corporation (M)
J. J. Dill Co. (F)
The C. B. Dolge Company (F)
Dow Chemical U.S.A. (M)
E. I. DuPont de Nemours & Co., Inc. (M)
FMC Corporation, Agri.Chem. Div. (M)
Monsanto Company (M)
Nalco Chemical Company (F)
Occidental Chemical Company (M)
Pennwalt Corporation, Agchem-Decco Div. (M)
U.S. Borax & Chemical Corp. (M)
Velsicol Chemical Corporation (M)
West Chemical Products, Inc. (F)

BRUSH

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Ciba-Geigy Corporation (M)
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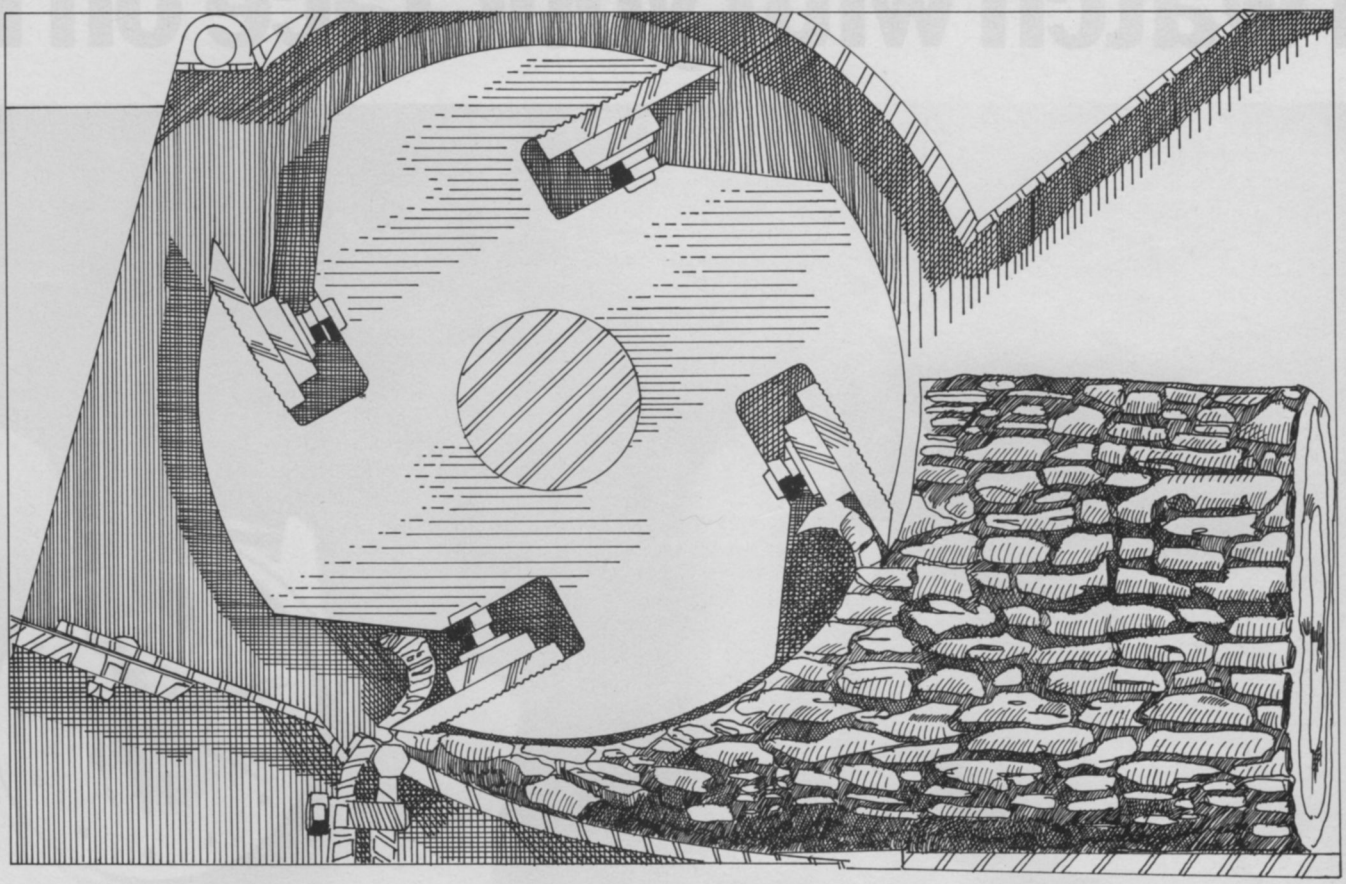
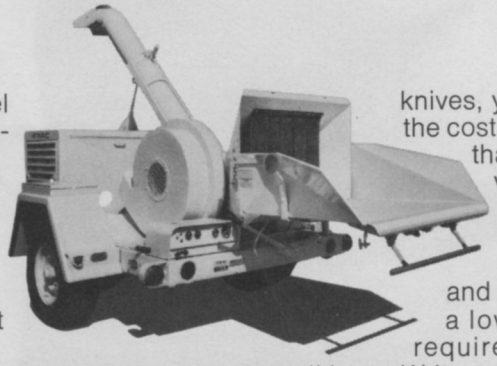
E. I. DuPont de Nemours & Co., Inc. (M)
FMC Corporation, Agri. Chem. Div. (M)
PBI-Gordon Corporation (F)
Velsicol Chemical Corporation (M)

CHEMICAL TRIMMING AND PRUNING

The Ansul Company (M)
Chevron Chemical Co. (M)
W. A. Cleary Corp. (F)
Diamond Shamrock Chemical Co. (M)
Dow Chemical U.S.A. (M)
E. I. DuPont de Nemours & Co., Inc. (M)
FMC Corporation, Agri. Chem. Div. (M)
Monsanto Company (M)
Rhodia Inc., Chipman Div. (M)
Stauffer Chemical Co. (M)
Vineland Chemical Company (M)

There's a neat angle to our new chipper story.

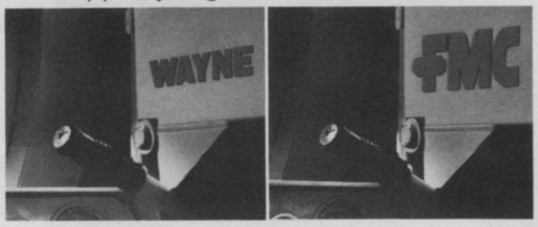




The secret's in the rotor. Being a steel forging, rather than a vulnerable casting, it has the structural strength to permit the blades to be positioned at the precise angle for slicing. No more chopping and mangling wood. Or spending an hour or two adjusting rotor blades. Our positive V-lock design reduces adjustment time to a matter of minutes.

When you feed our new Wayne brush chipper, you get neat, uniform, commercially usable chips. Without excess vibration, friction and fuel consumption.

And, there are other advantages. Such as a disposable six-sided bed knife that lasts 50% longer than conventional flat four-edged knives, yet can be replaced for less than the cost of sharpening others. A bed plate that adjusts horizontally as well as vertically for perfect results with hard or soft wood. A circular (not square) discharge chute that telescopes to any desired height and has 360° discharge controls. And a low noise level that meets OSHA requirements under normal operating conditions. Write or call for our chipper brochure. And, if you want proof instead of words, ask for a quiet demonstration.



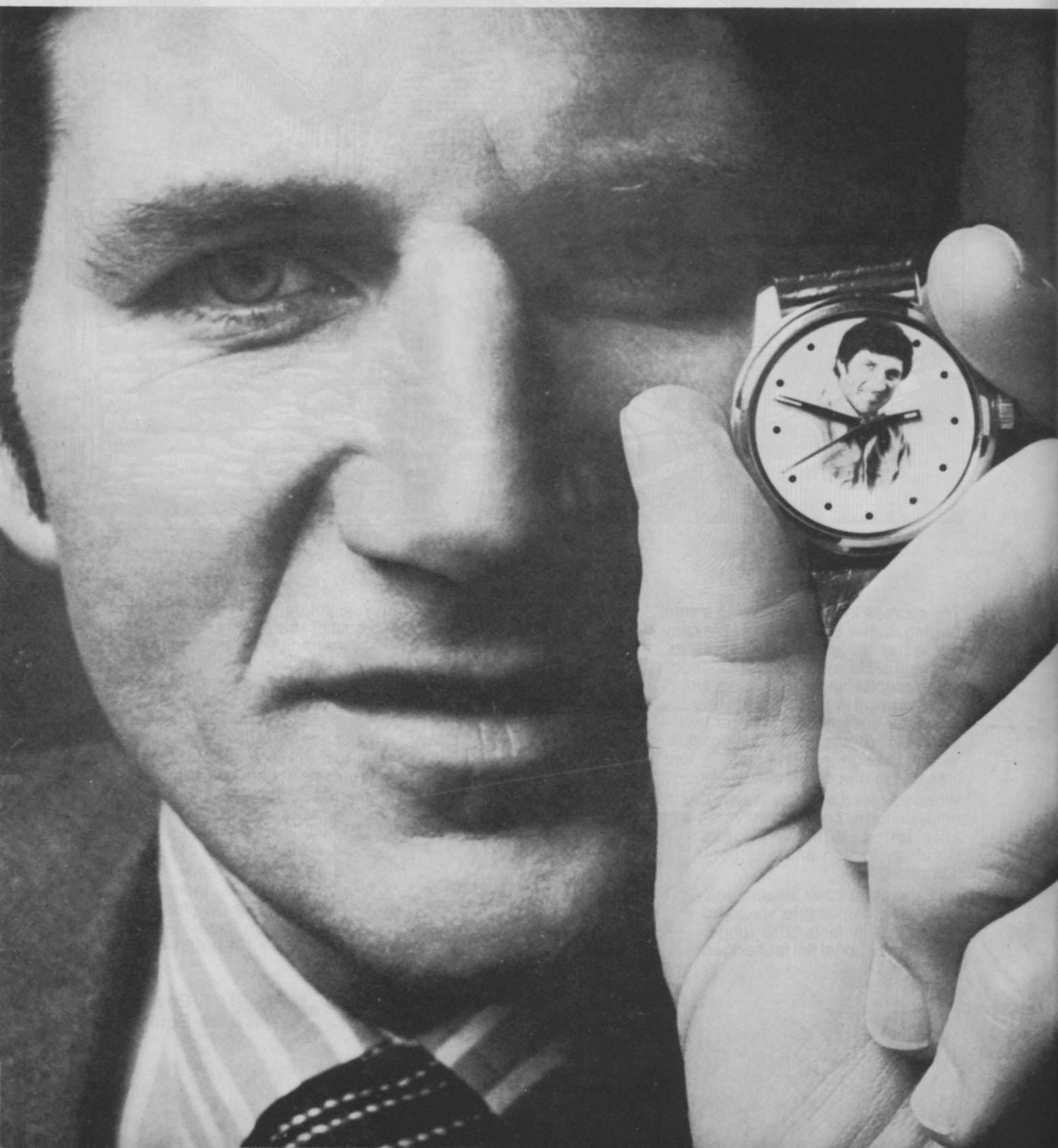
Now one and the same.

FMC Corporation
Municipal & Industrial Service Equipment Division • 1201 East Lexington Street • Pomona, Calif. 91766 • (714) 629-4071

FMC Environmental Equipment

For More Details Circle (151) on Reply Card

Give us 20 minutes of your time and we'll give you a watch with your face on it.



20 minutes, that's all we ask for.

That's all the time we need to show you right on the spot, in a live demonstration, how to control broadleaf weeds and brush economically and efficiently, without damage to the surrounding environment.

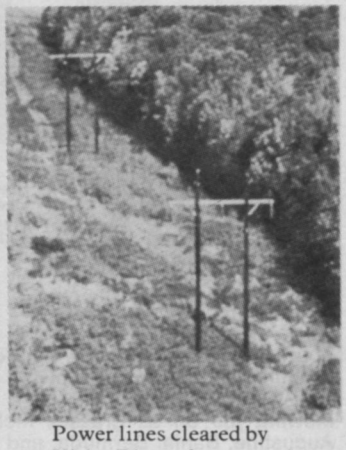
We'll show you in just 20 minutes how our Visko-Rhap herbicide drift control system clears roadways, power lines and waterways without herbicide drift that could otherwise lead to costly damage suits.

We'll show you how Visko-Rhap applies in thick, spaghetti-like strands that break up into heavy oil coated droplets before contact. They will hit and stick, controlling only the growth you want to control.

Aquatic use of Visko-Rhap in drainage systems keeps ditches and canals weed free.

Visko-Rhap clears right of way along railroad tracks.

Roadside application of Visko-Rhap adjacent to cropland.



Power lines cleared by Visko-Rhap of unwanted foliage.

Give us the 20 minutes and we'll not only give you a fine 17-jewel watch with your face on it, we'll give you something even more valuable.

Peace of mind with Visko-Rhap.

Rhodia/Chipman Division
23 Belmont Drive, Somerset, New Jersey 08873

Attention: Dave Perron

Gentlemen:

I am responsible for weed control in my organization. I would like to give you 20 minutes of my time for a live demonstration of Visko-Rhap. I understand I will receive a watch from you with a caricature or a photo of my face on it in return. Please contact me in order to arrange a demonstration.

Name _____ Organization _____

Address _____ Phone # _____

City _____ State _____ Zip _____

Job Title _____

No. of sq. ft. requiring herbicide drift control _____

(Note: Offer expires October 1, 1974) W

Visko-Rhap™ by Rhodia CHIPMAN DIVISION

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Meet the NEW BOB-CAT "PROS"

- **Professional, Heavy Duty**
- **Mowers, Trimmers, Riding Models**
- **Backed by 20 years of Power Equipment Experience**

21" Push-Type

Designed and built to take the wear and abuse of professional mowing. No clogging or clumping *even when mowing wet grass* . . . WE GUARANTEE IT! Get a smoother mowing job on all grasses including St. Augustine, Bahia, Bermuda, and Dicondra.

61" Commercial Riding Mower

Built for professional groundskeeping. Twin hydrostatic transmissions for easy control and outstanding maneuverability. Three full-floating blades, articulated blade deck, blade height control while "on-the-go". Panoramic visibility and a powerful 16 HP B&S engine.

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Pennwalt Corporation, Agchem-Decco Div. (M)
Rhodia Inc., Chipman Div. (M)
The O. M. Scott & Sons Co. (F)
Stauffer Chemical Co. (M)
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Ciba-Geigy Corporation (M)
Diamond Shamrock Chemical Co. (M)
Dow Chemical U.S.A. (M)
E. I. DuPont de Nemours & Co., Inc. (M)
Elanco Products Company (M)
Faesy & Besthoff, Inc. (M)
Lebanon Chemical Corporation (M)
Mallinckrodt Inc. (M)
Masonite Corporation (F)
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Nalco Chemical Co. (F)
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Rhodia Inc., Chipman Div. (M)
Rockland Chemical Co., Inc. (F)
Rohm & Haas Company (M)
The O. M. Scott & Sons Co. (M)
Stauffer Chemical Co. (M)
Thompson-Hayward Chemical Co. (M)
Tuco, Div. Upjohn Co. (M)
USS Agri-Chemicals, Div. USS Steel Corp. (M)
Uniroyal Chemical, Div. Uniroyal, Inc. (M)

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The Ansul Company (M)
The Bishop Co., Div. Lebanon Chemical Corp. (M)
Chevron Chemical Co. (M)
Ciba-Geigy Corporation (M)
W. A. Cleary Corp. (F)
Diamond Shamrock Chemical Co. (M)
The C. B. Dolge Company (F)
Dow Chemical U.S.A. (M)
E. I. Du Pont de Nemours & Co., Inc. (M)
Elanco Products Company (M)
FMC Corporation, Ag. Chem. Div. (M)
PBI-Gordon Corporation (M)
Gulf Oil Chemicals Company (M)
Lawn Medic, Inc. (M)
Mallinckrodt Inc. (M)
Meinhardt Products Div. (F)
Miller Chemical & Fertilizer Corp. (F)
Nalco Chemical Co. (M)
Pennwalt Corporation, Agchem-Decco Div. (M)
Ralston Purina Company (F)
Rhodia Inc., Chipman Div. (M)
Rohm-Haas Co. (M)
The O. M. Scott & Sons Co. (M)
Thompson-Hayward Chemical Co. (M)
Velsicol Chemical Corp. (M)
Vineland Chemical Co. (M)

AQUATIC

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Aquashade, Inc. (M)
Chevron Chemical Co. (M)
Diamond Shamrock Chemical Co. (M)
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Follow through with Dacamine... and knock out 76 stubborn broadleaf weeds.

Dacamine® turf herbicide kills your toughest broadleaf weeds . . . including perennial undesirables like dandelion, chickweed, poison ivy and knotweed.

Dacamine is powerful. Yet non-volatile. Won't jump up and move across the fairway on a hot day. So there's less danger to your valuable ornamentals.

Dacamine herbicide combines the weed-killing power of an ester with the safety of an amine. A water emulsifiable, postemergence herbicide, it has the unique characteristic to penetrate waxy weed foliage. Then Dacamine moves all the way to the roots. Kills the whole weed, not just the top.

TOTAL TURF CARE

This year, keep broadleaf weeds from blotting your turf. Add Dacamine to your weed control program and you'll kill tough weeds without the danger of volatilization.

Ask your supplier for more information or write: Agricultural Chemicals Division, Diamond Shamrock Chemical Company, 1100 Superior Avenue, Cleveland OH 44114.

BE DIAMOND SURE!

Diamond Shamrock Chemical Company

A UNIT OF DIAMOND SHAMROCK CORPORATION

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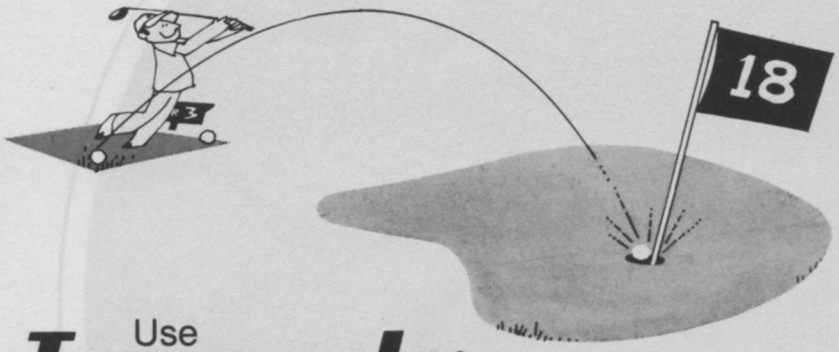
Control your fungi problems

FROM TEE TO GREEN



Use

Terrazole®

To Fight Cottony Blight, Grease Spot, Damping-Off

Terrazole soil fungicide is your best weapon against Pythium fungi—the cause of grease spot, damping-off and cottony blight in your turf.

With a case of Terrazole in your storage shed, you're set to act fast at the first sign of these turf diseases. Terrazole goes to work quickly and provides effective control of the problems caused by both Pythium and Phytophthora. Repeating at 5 to 10-day intervals provides preventive control. Keep your best weapon against Pythium on hand. Keep your greens green, your golfers happy.

Use

Terraclor®

To Control Brown Patch

Terraclor soil fungicide is the answer to Rhizoctonia control—the fungus that contributes to the formation of Brown Patch in Southern turf grasses.

Terraclor is easy to apply in liquid or dry granular form. Usually one application at the first sign of disease is all it takes.

Be sure you have Terraclor on hand. It's good assurance for healthy fairways and greens.

Write for complete information.

Mr. D. H. Sparks, Agricultural Division OLIN,
P. O. Box 991, Little Rock, Arkansas 72203

The rare bird in the business

Olin

Please send me more information on
Terrazole/Terraclor for a healthy turf.

Name_____

Address_____

City_____

State_____ **Zip**_____

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Plant Marvel Laboratories (M)
Ra-Pid Gro Corp. (F)
Rhodia Inc., Chipman Div. (M)
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Sierra Chemical Co. (M)
Swift Chemical Company (M)
USS Agri-Chemicals,
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ORGANIC NITROGEN

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Elanco Products Company (M)
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Thompson-Hayward Chemical Co. (M)

CONTACT

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S. B. Penick & Co. (F)

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Dow Chemical U.S.A. (M)
Elanco Products Company (M)
FMC Corporation,
Agri. Chem. Div. (M)
Faesy & Besthoff, Inc. (M)
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Ralston Purina Company (F)
Redwood Chemical, Inc. (F)
Rockland Chemical Co., Inc. (F)
The O. M. Scott & Sons Co. (M)
Shell Chemical Co. (M)
Stauffer Chemical Co. (M)
Thompson-Hayward Chemical Co. (M)
Tuco, Div. Upjohn Co. (M)
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Div. USS Steel Corp. (F)
Union Carbide Corp. (M)
Uniroyal Chemical,
Div. of Uniroyal, Inc. (M)
Velsicol Chemical Corp. (M)
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Ciba-Geigy Corporation (M)
FMC Corporation,
Agri. Chem. Div. (M)
Rohm-Haas Co. (M)

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U. S. Plant Patent 3151

There's a strong new entry in the Kentucky bluegrass lawn field, selected for its attractive appearance, low growth profile and good overall turf performance, including an ability to grow in moderate shade. A selection from Rutgers University, Glade has excellent turf quality, and has demonstrated good resistance to important lawngrass diseases including stripe smut, leaf rust, and powdery mildew. Glade mixes especially well with other elite bluegrasses and fine fescues. Glade persists in areas of moderate shade where many other bluegrasses weaken because of too little sun. Nationally tested as P-29, it is one of the fastest germinating and establishing bluegrasses; quickly produces a heavy close-knit rhizome and root system, and a very attractive, leafy, persistant turf. Ask for new Glade for use in full sun or in mixtures with fine fescue for shade at your local wholesale seed distributor.

Another fine product of Jacklin Seed Company

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Best design for better penetration.

We make two heavy-duty aerators. The Ryan **Renovaire** has 12 tine wheels that operate in pairs. Unlike other models, they swing a full 18 inches to follow the contours of your land and ride over rocks instead of being damaged by them. Weight can be added to each pair for deeper penetration.

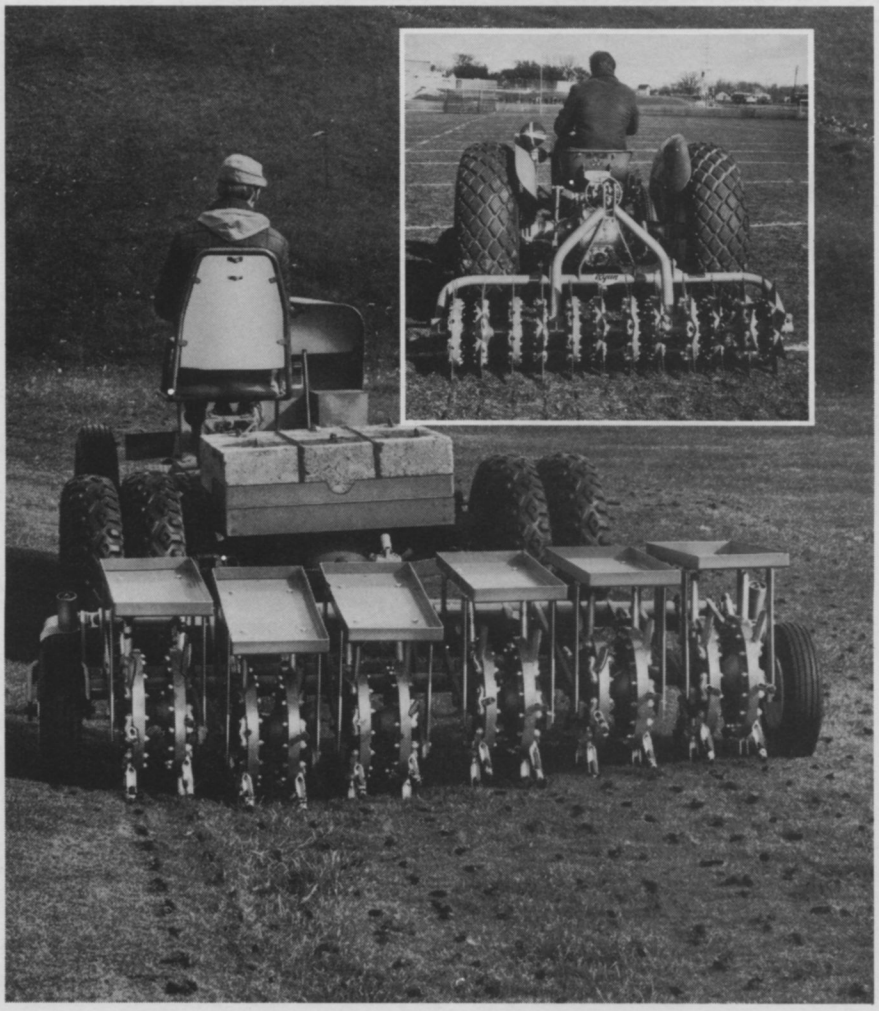
The Ryan **Tracaire** is an economical, rigid axle aerator. It's available with 9 or 12 tine wheels and has a 3-point hitch to force the tines into the turf.

Both models are fast and easy to use. Each can be used with interchangeable open spoon, closed coring, and slicing tines. And you can order a 12′ by 10′ dragmat as optional equipment.

The large area aerators from Ryan. We've designed them simply to work well. And built them to stay that way. For more information see your Ryan distributor or write: OMC-Lincoln, a Division of Outboard Marine Corporation, 2161 Cushman Drive, Lincoln, Nebraska 68501.

Ryan®

The large area aerators.



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Witco Chemical Corporation, Organics Div.(M)

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Dow Chemical U.S.A. (M)
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NITROFORM*
organic nitrogen

The slow-release nitrogen for W.I.N.ning turf . . . because it has a high percentage of W.I.N. (water insoluble nitrogen). No danger of burning, either.

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Abbott Laboratories, Abbott Park, North Chicago, Ill. 60064
Dipel, Bacillus thuringiensis, insecticide, biological, selectively controls, lepidoptera insect larvae

J. & L. Adikes, Inc., 182-12 93rd Ave., Jamaica, New York 11423
Gro-Well®, insecticides, herbicides, fungicides, (Liq., Wp, and Gran.)
Fertilizer
Adelphi Kentucky Bluegrass, seed
NK-100 Perennial Ryegrass, seed
NK-200, seed

Agricultural Alumni Seed Improvement Association, Inc., P.O. Box 158, Romney, Ind. 47981
Sodco, Kentucky bluegrass seed

Agro Chem Inc., 6677 N. Lincoln, Lincolnwood, Illinois 60645
Soil Rebuilder, rebuild and loosens compacted soils
Vita Feed, growth stimulant and misc. nutrients
Green Magic, growth stimulant and misc. nutrients and fertilizer
Soil Acid, soil loosener and conditioner
Grow Power Liquid, complete liquid fertilizer
Gran Grow Power, slow release fertilizer
Aqua Kill, aquatic weed killer
Bare Earth, total and quick soil sterilant
Weed Picker, contact non toxic weed and grass killer
Die Out, selective weed killer
Green Plasma, turns plants instantly green, not a dye or colorant, a plant extract
Leaf Cote Green, green color, anti dessicant
Leaf Cote Clear, clear anti dessicant
Vita Iron, natural organic iron micro nutrient, works on all plants and in all soils
Green Up, liquid fertilizer 28-0-0
Granular Grow and Control, complete fertilizer
Agro Automatic Injector, positive piston injection pump

Agway Inc., P.O. Box 1333, Syracuse, N.Y. 13201
Port A Bin, bulk handling of fertilizer at location
Fertilizer
Environmental protection chemicals, herbicides, insecticides, fungicides

Amchem Products, Inc., Brookside Avenue, Ambler, Penn. 19002
Amitrol-T amitrole, herbicide, postemergent
Amizine™ amitrole + simazine, herbicide, postemergent
Brominal bromoxynil, herbicide, postemergent
Emulsamine® E3 (oil soluble amine 2, 4-D), herbicide, postemergent
Ethrel, ethephon, (plant regulator) postemergent
Fenac, herbicide, bareground
Fenavar® liquid and granular, herbicide, bareground
Weedar® (amine, 2, 4-D), herbicide, postemergent
Weedazol amitrole, herbicide, postemergent
Weedone® LV4 (ester 2, 4-D), herbicide, postemergent
Weedone 2, 4, 5-T, herbicide, postemergent, woodplants
Weedone 170 2, 4-D + 2, 4-DP ester, herbicide, postemergent, woody plants
Weedone 638 2, 4-D, herbicide, postemergent, broadleaf
Weedone 2,4,5-TP (Silvex), herbicide, postemergent
Super D Weedone, herbicide, postemergent, lawns
Super D Weedone, herbicide, postemergent, foam
3D Weedone, herbicide, postemergent, turf weeds
Nu-Lawn™, herbicide, postemergent, broadleaf
Weedone, herbicide, premergence crabgrass control
Aqua-Kleen® 2,4-D Granular, herbicide, aquatic, postemergent
Lo-Drift™, Spray additive
Lo-Scent, odor inhibitor
Tre-Hold®, sprout inhibitor
Oramental Weeder (granular), herbicide, preemergent

American Bioculture Inc., Bio-Turf Division, P.O. Box 424, Glen Head, L.I., New York 11545
Bio-Turf, soil conditioner, bio-chemical 100% organic flocculating agent

American Cyanamid Co., Agricultural Div., P.O. Box 400, Princeton, N.J. 08540
Abate® 4E, insecticide, mosquito larvae
Amino Triazole Weed killer, herbicide, abatement
Cyanogas®, fumigant, rodenticide
Cygon®, insecticide
Malathion ULV concentrate, insecticide
Thimet® phorate, insecticide, liquid

American Excelsior Company, P. O. Box 5067, Arlington, Texas 76011
Curlex™ Blanket, permanent vegetative cover, seeded areas, retains moisture, maintain temperature, provide shade

The Ansul Company, 3385 Airways Blvd., Memphis, Tenn. 38116
Ansar 529HC (MSMA), herbicide selective contact
Phytar 560 (Cacodylic Acid), herbicide non-selective contact
Retard (Maleic Hydrazide), growth retardant

Applied Biochemists, Inc., 5300 W. County Line Rd., Mequon, Wis. 53092
Cutrine®, algaecide for potable water reservoirs; farm, fish and fire ponds; lakes; fish hatcheries
Cutrine® Granular, algaecide for specific control of chara in potable water reservoirs; farm, fish and fire ponds; lakes; fish hatcheries
Swimtrine®, algaecide for swimming pools
Cutrine®-Plus, new and improved algaecide for the same uses as Cutrine. In both liquid and granular form. Treat-

Broadleaf weedkill simplified

with less expense, work and risk of injury to grass or ornamentals.

SEVERE BROADLEAF problems seem to lead people to TRIMEC Turf Herbicides, most of them delighted to discover there now is a single solution effective against the whole spectrum of broadleaf weed pests.

TRIMEC is not simply a rescue spray. Using it instead of your ordinary turf herbicide eliminates the need for rescue measures. It's that simple.

It costs significantly less to attain and maintain weed-free turf the TRIMEC way. When even the most persistent broadleafs can be overpowered with a single product, and usually a single application, you save money, labor and complications. Special treatments or repeated applications take time away from other work. Too often, die-hard weed species may outlast the manpower and herbicide dollars available for broadleaf control.

Get on top of your broadleaf problems with TRIMEC and get all these advantages:

- Unequalled spectrum of control
- Re-treatment usually not needed
- Reduced chemical dosage required
- Rapidly biodegraded in the soil
- Minimal risk of injury to sensitive turf and ornamentals
- Maximum results at less cost

TRIMEC is tough on broadleaf weeds, but safe to ornamentals and grasses. The amounts of the active ingredients required for effective weed control is so low that, properly applied, no instance of damage to ornamentals has ever been reported.

Coming in two popular formulations, TRIMEC allows you to match the herbicide to the 2, 4-D tolerance of your turf. The "Bentgrass" product is recommended for bent and other sensitive grasses while the "Fairway" formulation may be used on all commercial turfs, except St. Augustine grass.

Cover your broadleaf problems with a solution you can depend on. Ask your TRIMEC supplier for "Fairway" or "Bentgrass" herbicides. Reserve yours now.

U.S. Patent 3,284,186

trimec
TURF HERBICIDES®

These products available through GSA Contract No. 65-075-05575 ESC Group 68, Part II Section A—Herbicides

PBI-GORDON CORPORATION
200 SOUTH THIRD STREET KANSAS CITY, KANSAS 66118
Telephone: 913/342-8780

For More Details Circle (143) on Reply Card

ment requires less chemical, reduces treatment costs.
Stocktrine, algaecide for livestaock watering tanks, troughs and ponds.
Black Algaetrine, algaecide specifically for control of black algae and other resistant strains in swimming pools.

Aquashade, Inc., Box 117, Dobbs Ferry, New York 10522
Aquashade, aquatic growth control

Aquatrols Corp. of America, 1400 Suckle Highway,Pennsauken, N.J. 08110
Aqua-Gro (technical), granular, Aqua-T, blended soil wetting agent for improved wetting and penetration
Stoma-Seal, anti-transpirant, reduce wilt
Aqua-Drain (100% active), septic and leach field drawing agent.
Aqua-GRO (100% liquid), Aqua-T (100% Liquid, Aqua-GRO Granular (20% active on vermiculite, blended soil wetting agents for improved wetting, penetration, and drainage

Asplundh Tree Expert Co., 50 East Hamilton St., Chalfont, Pa.
Sprout Gard, tree dressing inhibitor
Weed and grass killer, herbicide, bareground

Atlas Chemical Industries, Division of ICI America, Wilmington, Delaware 19898
Atlox®, emulsifier, non-ionic and anionic-nonionic
Atplus®, surfactant, non-ionic
Atmul®, surfactant, non-ionic
Gro-Safe® activated charcoal, a soil amendment for reducing effects of organic pesticides

B

BASF Wyandotte Corporation, 1609 Biddle Ave., Wyandotte, Michigan 48193
Turface, soil amendment

The Bishop Co., Division of Lebanon Chemical Corporation, Box 317, Lebanon, Pa. 17042
"Country Club" fertilizers and weed or insect control products for turfgrass and gardens

The R. H. Bogle Company, P.O. Box 588, Alexandria, Virginia 22313
Bo-Rid, herbicide (bareground)
Aceto Diuron, herbicide (bareground)
Aceto Dalapon, herbicide (bareground)
Bromacil herbicides, herbicide (bareground)
Bo-Rid Granulars, herbicide (bareground)
Bo-Rid K.O. Phenoxies, herbicide weed and brush
Bo-Rid SRC, herbicides (slow release)
Aceto, herbicides (bareground)

E. F. Burlingham & Sons, P.O. Box 217, Forest Grove, Oregon 97116
Bonnieblue Kentucky Bluegrass, seed
Majestic Kentucky Bluegrass, seed
Sydsport Kentucky Bluegrass, seed
Birka Kentucky Bluegrass, seed
Koket Chewings Fescue, seed

C

Samuel Cabot, Inc., One Union St., Boston, Mass. 02108
Tree healing paint, heals tree wounds, stops rot, prevents sap evaporation

Chemagro Division of Baychem Corp., P.O. Box 4913, Hawthorn Rd., Kansas City, Missouri 64120
Dyrene®, fungicide
Baygon® 70% WP, insecticide
Dasanit® 15G and SC, insecticide/nematicide

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TWO COMPLETE SEED INVENTORIES

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Gold Tag Sod Quality Blends

Special Mixes for your particular need

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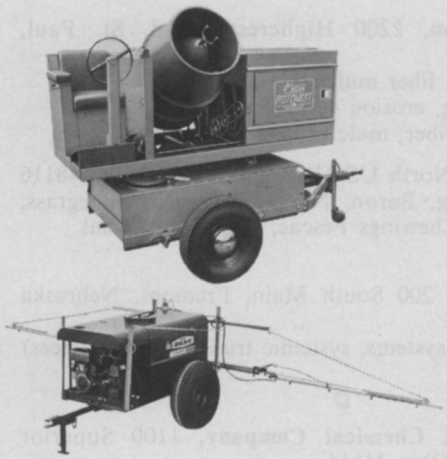
GRAND RAPIDS 616-877-4614

The grass is always greener...and with good reason



Well-groomed grass and turf demands the best in continuing maintenance programs. Especially vital in the proper application of pesticides and fertilizers, is good spray equipment. BEAN® sprayers have proven their capabilities over 84 years of dependable service. The BEAN Rotomist,® for example, is a family of mist-type sprayers with virtually limitless application. Shade tree spraying, mosquito and other pest control and leaf windrowing, are only a few of the uses. Controlled air delivery is a trademark of all BEAN air sprayers. And, BEAN boom sprayers are designed specifically for turf maintenance and are available in many models and tank sizes. When you add it all up — efficiency, versatility, dependability, and total performance — BEAN sprayers are the best insurance you can have to keep your side of the fence greener this year. Call your FMC representative for a demonstration today, or contact:

FMC Corporation
Agricultural Machinery Division
Jonesboro, Arkansas 72401

FMC Environmental Equipment

For More Details Circle (153) on Reply Card

Dylox® 80% WP and LS, insecticide
Guthion® WP and SC, insecticide
Dexon®, fungicide
Baytex®, insecticide
Di-Syston®, insecticide
Metasystox®-R, insecticide
Nemacur®, nematicide

Chevron Chemical Co., 200 Bush St., San Francisco, Calif. 94120
Monitor 4 dimethyl phosphoramidothioate, insecticide
Dibrom 8 EC naled, insecticide
Diquat diquat dibromide, herbicide, aquatic
Paraquat CL paraquat dichloride, herbicide, contact
Difolatan 4 flowable (difolatan), fungicide, broad spectrum
Isotox, insecticide
Orthocide (captan products), fungicide, broad spectrum
Volik Supreme (oil), insecticide, miticide

Chipman Div., Rhodia, Inc., 23 Belmont Dr., Somerset, N.J. 08873
Chip-Cal tri-calcium arsenate, herbicide,preemergent
Chipco Turf Herbicide MCPP, herbicide, postemergent
Chipco Turf Kleen herbicide, postemergent
Chipco Turf Herbicide D, herbicide, postemergent
Chipco Spot Kleen, dimethyl, thiophanate, fungicide
Chipco Microgreen, fertilizer, liquid
Sup'R-Flo maneb, fungicide, flowable
Chipco Buctril, herbicide, postemergent
Chiptox, MCPA, herbicide, postemergent
Chipco Spreader-Activator, non-ionic spray adjuvant
Chipco Thiram 75, fungicide, wettable powder

Ciba-Geigy Corporation, Agricultural Div., P.O. Box 11422, Greensboro, N.C. 27409
AAtrex® 80W, atrazine, herbicide, turf for sod production, noncrop land, pre- and postemergence
Atratol® 8P, atrazine, sodium chlorate, sodium metaborate, herbicide, nonselective, bareground, pre- and postemergence
Atratol® 80W, atrazine, herbicide, nonselective, bareground, pre- and postemergence
Diazinon®, diazinon, insecticide, lawns, ornamentals
Pramitol® 5PS, prometone, simazine, sodium chlorate, sodium metaborate, herbicide, bareground, noncrop land, pre- or postemergence
Pramitol® 25E, prometone, herbicide, bareground, noncrop land, pre- or postemergence
Princep® 4G, simazine, herbicide, nurseries, Christmas tree plantings, shelter belts; nonselective for noncrop land, preemergence
Princep® 80W, simazine, herbicide, grasses grown for seed (Pacific N.W.); nurseries, turf grass for sod; nonselective for noncrop land, preemergence
Sarolex®, Diazinon, nematicide, insecticide, turf
Sequestrene®, chelated micronutrients, ornamentals, turf

W. A. Cleary Corp., P.O. Box 10, 1049 Somerset St., Somerset, N.J. 08873
Cleary's 3336™, fungicide, systemic
Bromosan™, fungicide, systemic and contact fungicide
PMAS 10%, fungicide and herbicide
Caddy, fungicide
Spotrete, fungicide
Cad-Trete, fungicide
MCPP + 2,4-D, herbicide, postemergent
Methar 30 and 80 (DMSA), herbicide, contact 30% and 80%
Super Methar, herbicide
Cleary's AMA + 2,4-D, herbicide,selective, postemergent
Tru-Green, trace element, liquid chelating agent
Greenzit, colorant (turf and tree)
Allwet, wetting agent, non-ionic
Clearspray, anti-transpirant
Bromosan Fungicide, (combination of systemic plus contact fungicides)
MCPP, herbicide

Colloidal Products Corporation, P.O. Box 621, Petaluma, Calif. 94952
Bio-Film®, spreader, sticker
Buffer-X®, spreader, activator, buffer
Compex®, compatibility agent for liquid fertilizers
Fomex®, foaming spray adjuvant and spreaderactivator for herbicide sprays
Multi-Film L, water dispersible spreader-activator
Multi-Film X-77, non-ionic spreader-activator
Nu-Trex, spreader-nutrient-buffer
Regulaid, spreader-activator for growth regulator sprays
Solvaid, spreader-stabilizer for oil sprays
Tronic, spreader-activator

Conwed Corporation, 2200 Highcrest Road, St. Paul, Minnesota 55113
Conwed Mulch, fiber mulch
Conwed Netting, erosion control netting
Hydro-Mulch Fiber, mulch fibers

Cowbell Seeds, 380 North US-23, Brighton, Michigan 48116
Merion, Fylking, Baron, Nugget Kentucky Bluegrass; Winter Green Chewings Fescue; Norlea Perennial Ryegrass, seeds

Creative Sales, Inc., 200 South Main, Fremont, Nebraska 68025
Medicaps® tree systems, systemic trunk implants (trees)

D

Diamond Shamrock Chemical Company, 1100 Superior Avenue, Cleveland, Ohio 44114

NEW! NEW! NEW! NEW!

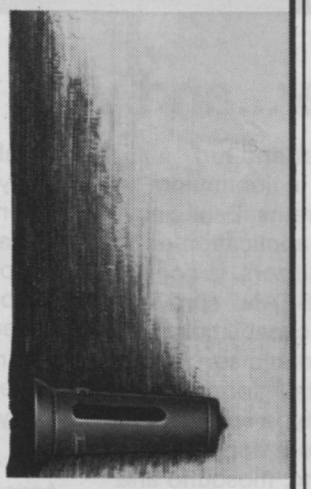
IRON MEDICAPS

The Fast, Easy Way to Treat

CHLOROSIS

On Pin Oak and other Trees

Leading university researchers confirm effectiveness of Iron Medicaps in treating Chlorosis. Nothing else works as fast or gives the lasting control that Medicaps provide.
Medicaps are inserted into small injection holes in the tree trunk. Chemicals are released directly into the sap stream from the Medicap. The tapered head of the Medicap seals the hole, promotes healing. It takes only 3 Medicaps and less than 10 minutes to treat a 5-inch diameter tree . . . and most trees show improvement in 3 weeks or less.



GOES RIGHT TO THE PROBLEM

TREE SYSTEMS ®

MEDICAPS

CREATIVE SALES INC.
200 South Main, Fremont, Nebraska 68025
Telephone (402) 727-4800

Dacamine® herbicide
Dacthal® herbicide
DSMA herbicide
Daconate® herbicide
2,4-D herbicide
2,4,5-T herbicide
Silvex® 2,4-D, herbicide
Daconil 2787®, fungicide

J. J. Dill Co., P.O. Box 788, Kalamazoo, Mich. 49005
D-Lete, herbicide, bareground, liquid and granular
Kleen Turf, herbicide, selective, broad-leaved plants

The C. B. Dolge Company, 11 Ferry Lane West, Westport, Connecticut 06880
Tote-Weed Killer, herbicide, bareground
Penetrate, soil conditioner
Lake Dye, non toxic dye for water
Solexto, insecticide, turf
EWT Plus, herbicide, selective MCPP plus 2,4-D
Boost, solvent detergent cleaner

Dow Chemical USA, P.O. Box 1706, Midland, Michigan 48640
Formula 40, herbicide
DMA-40, herbicide
Dowpon®, herbicide, non-selective
Dowfume® MC-2, fumigant
Dursban® 2E, insecticide
Fumazone® 86, fumigant
Zectran® 2E, insecticide
Dow General Weed Killer, herbicide
Esteron®, herbicide
Kuron®, herbicide
Premerge®, herbicide

E. I. Du Pont de Nemours & Co., Inc., 1007 Market St., Wilmington, Del. 19898
Hyvar® X bromacil weed killer, Hyvar® X-L, (liquid) bareground
Krovar® I, weed killer, bareground
Karmex® diuron weed killer, bareground, preemergence
Ammate® X weed and brush killer, contact
Tersan® LSR, turf fungicide
Tersan® 1991, turf fungicide
Tersan® SP, turf fungicide
Tersan® 75 Thiram Fungicide
Benlate® benomyl fungicide, fungicide, Dutch Elm disease aid
Tupersan® siduron, herbicide, preemergent, for crabgrass

E

Elanco Products Company, P.O. Box 1750, Indianapolis, Indiana 46206
Balan® benefin, herbicide, preemergent
Treflan® trifluralin, herbicide, preemergent
Dymid® diphenamid, herbicide, preemergent, liquid and granular
Parnon®, fungicide
Pipron®, fungicide, liquid concentrate
Arest®, growth regulator

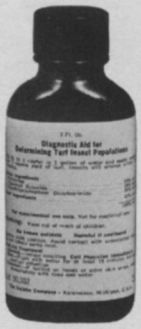
Engelhard Minerals & Chemical Corp., Mineral & Chemicals Div., Menlo Park, Edison, N.J. 08817
Granular Attapulgus® Clays, Attaclay® sorptive minerals used as conditioners for agricultural dusts and wettable powders

F

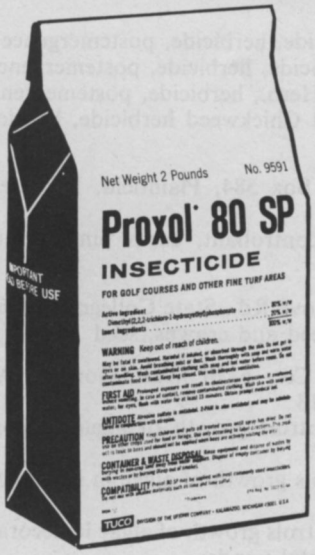
FMC Corporation, Agricultural Chemical Division, 100 Niagara St., Middleport, New York 14105
Tandex® karbutilate, herbicide, postemergent, bareground
DNBP, insecticide

Take the guesswork out of turf insect control

Diagnostic Aid from TUCO



Many turf insect larvae are night feeders, so the first evidence of their activity frequently is damaged turf. Diagnostic Aid, applied to turf as directed, causes insects to emerge to the surface within 10 minutes. They can be identified and counted to determine the level of infestation and whether an insecticide should be applied. It also can be used after insecticide application to measure the control obtained.



Proxol* 80 SP Insecticide from TUCO

Proxol is the one insecticide developed especially for use on fine turf and ornamentals. Sod webworms and cutworms are two major groups of turf insects controlled by Proxol. It is estimated that each sod webworm larva can chew up 20 square inches of turf in its average life span of 20 to 40 days; the cutworm larva can devour up to 36 square inches. With 300 to 500 larvae generated from each adult in a period of 10 to 21 days, it becomes apparent why early detection and control are desirable. Using Diagnostic Aid and Proxol together lets you program insect control.

*Trademark

One bottle of Diagnostic Aid FREE in each case of Proxol 80 SP.

BEFORE USING ANY PESTICIDE STOP READ THE LABEL

TUCO Division of The Upjohn Company, Kalamazoo, Michigan 49001

For More Details Circle (152) on Reply Card

Lead arsenate, insecticide
Dalapon, herbicide
Dichlone, fungicide
Systox, insecticide
Tedion® tetradifon, miticide
Arsenical compounds, insecticide
DNOC, fungicide
Endosulfan, Thiodan®, insecticide
Guthion Azinphosmethyl, insecticide
Lindane, insecticide
Methyl Parathion, insecticide
Oils, insecticide, dormant and summer
Parathion, insecticide
Phorate Thimet, insecticide
Pyrethrins, insecticide
Pyrenone®, Synergized Pyrethrins, insecticide
Sevin carbaryl, insecticide
Sinox®, herbicide
Copper Sulfate, tri-basic, fungicide
Cyprex, fungicide
Ferbam, fungicide
Maneb, fungicide
Polyram®, fungicide
Sulfur, fungicide
Synthrin® resmethrin, insecticide
Tetralate® resmethrin + Neo Pynamin, insecticide
Thiram, fungicide
Zineb, fungicide
Ziram, fungicide

Faesy & Besthoff, Inc., 143 River Road, Edgewater, N. J. 07020
F & B Lawn & Turf Fungicide, granular, combo of Dyrene and maneb
F & B Aspon Chlordane, insecticide, broad spectrum granular and sprayable

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HI-RANGER Aerial Towers meet the "American National Standard for Vehicle-Mounted Elevating and Rotating Work Platforms ANSI A92.2-1969," as required by the Williams-Steiger Occupational Safety and Health Act of 1970; Part 1910, Occupational Safety and Health Standards; Section 1910.67; Part 1926, Safety and Health Regulations for Construction; Sections 1926.451 (f), 1926.556, 1926.952 (b), and 1926.955 (e), as applicable.

HI-RANGER
MOBILE AERIAL TOWERS, INC.

MOBILE AERIAL TOWERS, INC. • Dept. N • 2314 BOWSER AVE. • FORT WAYNE, IND. 46803

F & B Eptam 2.3, herbicide, granular, preemergent
F & B Sevin carbaryl, insecticide, granular, flowable, dust and wettable powder for mulations

Ferguson Fumigants, Inc., 93 Ford Lane, Hazelwood, Missouri 63042
Zytox Gelled Soil Fumigant, gelled methylbromide

Ferry-Morse Seed Co., P.O. Box 100, 111 Ferry-Morse Way, Mountain View, California 94040
Turf and Lawn Seeds

Ferti-Feeder, Inc., 2419 Easton Blvd., Des Moines, Iowa 50317
Ferti-Feed, tree food (localized food formulations)
Ferti-Sulf, soil ph adjustment
Ferti-Iron, iron chlorosis treatment

Floridin Company, 3 Penn Center, Pittsburgh, Pa. 15235
Florex attapulgite, granular clay carrier
Diluex attapulgite, powdered clay carrier
Min-U- Gel 200 attapulgite, suspending clay for fluid fertilizer

Foamspray Chemicals Inc., 10414 Harry Hines Boulevard, P.O. Box 20183 Dallas, Texas 75220
Foamspray®, drift reduction, foaming adjuvant, surfactant
OD 4™ Liquid Humus, growth aid
Foamspray® Nozzles & Handguns, spraying hardware, drift reduction
Microtil™ Soil Conditioner, soil conditioner, growth aid
Captan fungicide
Imidan 1E, insecticide
Heptachlor 10 Granular, insecticide
Malathion 57% E.C., insecticide
Toxaphene 10 Granulator, insecticide
Chlordane 72% E.C., insecticide
Sevin liquid, insecticide
Zectran 2E, insecticide
SS78 Spreader Sticker, spreader sticker, surfactant
Mix Aide 168, compatability aid
Spray Oil, insecticide

Freers Elm Arrester, P.O. Box 103, Muscatine, Iowa 52761
Freers Elm Arrester, fungicide
Freers Elm Arrester is injected into elm trees for the control of Dutch Elm disease. Evidence bears out that this also prevents root graft transmission.

G

PBI-Gordon Corporation, 300 South Third St., Kansas City, Kansas 66118
Trimec Fairway herbicide, herbicide, postemergence
Trimec Bentgrass herbicide, herbicide, postemergence
Trimec St. Augustine Herb., herbicide, postemergence
Trimec Dandelion and Chickweed herbicide, herbicide, postemergence

Grass Growers, Inc., P.O. Box 584, Plainfield, New Jersey 07061
Terra Tack, erosion controllant, earth binder, mulch binder and straw tack

Grasslyn, Inc., 641 Pine Grove Rd., State College, Pa. 16801
Penngift crownvetch seed and crowns, seed

Great Lakes Biochemical Co., 6120 West Douglas Ave., Milwaukee, Wisconsin 53218
Algimycin PLL-C, controls growth of algae in ponds, lakes and lagoons
Algimycin PLL, controls growth of algae in small ponds and fountains
Algimycin GLB-X, controls growth of algae in decorative fountains and ornamental ponds
Monofilm ERE, evaporation retardant for trees and turf and for use in transplanting.
Algae Shock, granular algicide, kills and prevents regrowth of algae in swimming pools.

For More Details Circle (114) on Reply Card

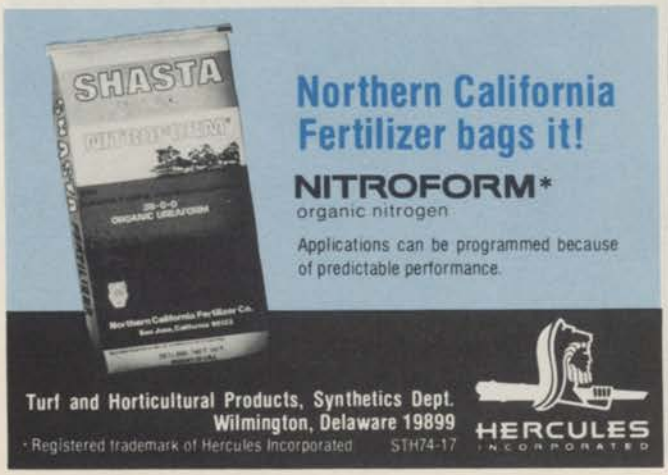
Algimycin tabs, tabletted algicide, kills and prevents regrowth of algae in swimming pools
Algimycin "aba", liquid algicide, kills and prevents regrowth of algae in swimming pools
Filter-Cleanse, filter cleaner for use in and around swimming pools
Sequa-Sol, stain protection for use in and around swimming pools
TLC, tile, liner and chrome cleaner for use in and around swimming pools
Hypo-Clean, prevents clogged feeder lines for use in and around swimming pools
Keep-N-Heet, retards evaporation, reduces water heat loss
Yardarm — cleaner/conditioner/sealer for metal and fiberglass walls and machinery
Algimycin PLL-C Slow Release Tablets, for control of algae in ponds and lakes

Great Lakes Chemical Corporation, P.O. Box 2200, Hwy. 52 N.W., West Lafayette, Indiana 47906
Brom-O-Sol, soil fungicide
Brom-O-Gas, soil fumigant
Soilbrom 40, nematicide
Soilbrom 85, nematicide
Soilbrom 90 E.C., nematicide
Chlor-O-Pic, insecticide fumigant
Terr-O-Cide 15, soil fumigant, multipurpose
Terr-O-Cide 15-D, soil fumigant, multipurpose
Terr-O-Cide 30, soil fumigant, multipurpose
Terr-O-Cide 30-D, soil fumigant, multipurpose
Terr-O-Gel 67, soil fumigant, controlled release
Terr-O-Gas 67, soil fumigant

Greenlife Products Company, Inc., P.O. Box 72, West Point, Virginia 23181
Pine bark soil conditioner, soil amendment
Pine bark mulch, for weed retarding, moisture holding, weather protection and soil improvement
Pine bark Deco nuggets, decorative bark
Cow manure, fertilizer 2-1-2
Top soil, soil improvement
Peat humus, soil improvement
Cyress Bark
Shredded Hardwood Bark
Western Decorative Bark

The Gregg Co., 1714 Bannard St., P.O. Box 149, Riverton, New Jersey 08077
Nu-Type Green Lawn Spray, latex emulsion, grass colorant concentrate for dormant grass

Gulf Oil Chemicals Co., 9009 West 67th Street, Merriam, Kansas 66202
Carbyne barban, herbicide (post)



Outfox (cyprazine), herbicide (post)
Protect, seed protectant

H

Hercules Incorporated, 910 Market St., Wilmington, Delaware 19899
Nitroform®, fertilizer, slow-release ureaform
Powder Blue™, fertilizer, sprayable slow-release ureaform
Blue Chip®, fertilizer, slow-release ureaform for dry application

Hydro-Turf, P.O. Box 3, Elk Grove, Ill. 60007
Fertilizer
Erosion Control Chemicals
Hydro-Tack, erosion control agent
Liquid Fertilizer, fertilizer

I

International Minerals & Chemical Corp., IMC Plaza, Libertyville, Illinois 60048
Sul-Po-Mag, fertilizer (natural form of sulphate of potash, magnesium and sulphur)

International Spike, Inc., 462 East High Street, Lexington, Ky. 40508
Jobe's Tree Food Spikes, 16-8-8 fertilizer

J

Jacklin Seed Co., Division Vaughan-Jacklin Corporation, E. 8803 Sprague Ave., Spokane, Washington 99213
Fylking Kentucky Bluegrass, turfgrass seeds
Merion Kentucky Bluegrass, turfgrass seeds
15 other Turfgrass Varieties, turfgrass seeds

Johns-Manville Corp., Box 290, 22 E. 40th St., New York, N.Y. 10016
Diatomite, soil conditioner

K

KDM Co., P.O. Box 6814, San Antonio, Texas 78209
Spra-Mate emulsifier, application adjuvant for invert emulsions

Kay-Fries Chemicals, Inc., Crop Protection Division, Stony Point, New York 10980
Exhalt™ 4-10 (Pinethylene™), anti-transpirant (Use to prevent winter damage on evergreens. Use also for all-season transplant of deciduous and evergreen trees and ornamentals).
Exhalt™ 800, sticker, extender (use as a sticker to assure immediate foliar sticking of pesticides and simultaneously as an activity extender to prevent removal of pesticides by rain, wind and volatilization).

Kennecott Copper Corp., P.O. Box 19232, 1055 Conrad Sauer, Houston, Texas 77024
K-Lox, algaecide

Kidwell Turf Farms, Inc., Route 3, Box 16A, Culpeper, Va. 22701
Sod, cool season grasses, fescue mixtures and bluegrass blends
Warm season grasses, Meyer Z-52, Zoysia and hybrid Bermuda

L

Lakeshore Equipment & Supply, 10237 Berea Road, Cleveland, Ohio 44102
Thiram, fungicide
Urea-formaldahyde, fertilizer
Lakeshore brand fertilizer, fertilizer

Lawn Medic Inc., 1024 Sibley Tower Bldg., Rochester, N.Y. 14604

THE TWO YEAR LIFE SUPPORT SYSTEM ... THE PILL

You can now provide a safe, simple, economical means to better growth and increased survival of landscape plants. Feed new or existing trees and shrubs with THE PILL, Agriform Planting Tablets 20-10-5. Each blue pill of concentrated, timed release fertilizer provides a two-year supply of nitrogen, phosphorous and potash, plus iron, calcium and sulfur, in a non-burning form.

Compare the advantages of THE PILL over conventional fertilizers:

- **GREATER TIME & LABOR SAVING**—One planter can carry 100 PILLS in his apron pockets, and one application in the root zone LASTS TWO FULL YEARS!
- **GREATER ACCURACY**—No measuring or mixing with the backfill is required. The proper amounts of nutrients, properly balanced, are released at the proper times for optimum growth.
- **GREATER VERSATILITY**—The unique composition of these tablets meets the nutrient requirements of all species of landscape plants on virtually all soil types.
- **GREATER EFFICIENCY**—Loss of nutrients to leaching or fixation is minimal, even on sandy or problem soils.
- **GREATER ECONOMY**—In addition to saving time and labor, THE PILL costs you only about a nickel a year per new plant. For example...You can obtain cases of 500 of the 21-gram tablets at these delivered prices in the contiguous United States:

NUMBER OF CASES	1 to 7	8 to 15	16 to 31	32 to 79	80 to 159
*CASE PRICE	$29.00	$26.00	$23.00	$21.00	$19.50

*Prices subject to change.

For specifications and directions plus prices on greater quantities, write us at our address below. Then join the thousands of landscape architects, contractors, nurserymen and arborists who have been specifying and using THE PILL for more than a decade.

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37650 SYCAMORE ST., NEWARK, CALIFORNIA 94560
Manufacturers of long-lasting Osmocote® and Agriform controlled release fertilizers.

Dept. WTT 874

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Total Organic, fertilizer, 38% urea-formaldehyde
Soil Nutrient, fertilizer
2,4-D + Silvex, herbicide, liquid
Colorant
Pre-Germ Grass, seed, artificial seed germinating process

Lebanon Chemical Corporation, P.O. Box 180, Lebanon, Penna. 17042
"Greenskeeper," weed control, insect control, pre-emerge products, with and without fertilizer, insecticide, herbicides, fungicides
"Greenskeeper," fertilizer (slow release)

Lethelin Products Co., Inc., 15 MacQuesten Parkway So., Mount Vernon, New York 10550
Borerkil (lindane), insecticide, kills borers in trees, shrubs and flowers

Lofts Pedigreed Seed, Inc., P.O. Box 146, Bound Brook, N.J. 08805
Baron Kentucky Bluegrass, seed
Merion Kentucky Bluegrass, seed
Jamestown Red Fescue, seed, a chewings type
Exeter Colonial Bentgrass, seed
Kingstown Velvet Bentgrass, seed
Nugget, Pennstarr, Fylking, Kentucky Bluegrasses and Manhattan and Pennfine ryegrasses

Loveland Ind., Inc., 2307 W. 8th, P.O. Box 483, Loveland, Colo. 80537
Mo-Bait, filmer, adjuvant, attractant
Flozine, suspending agent for wettable powders and flowables
Tank cleaner, tank neutralizer and cleaner

Lowden, 16 Franklin Street, Needham Heights, Maine 02194
Antibiotic Injectors for trees, used in control of Dutch Elm Disease

M

Mallinckrodt, Inc., 2nd. & Mallinckrodt Streets, St. Louis, Missouri 63160
Auragreen®, auramine, turf spray indicator dye
Cadminate®, turf fungicide
Fungo™, systemic turf fungicide, broad-spectrum
Calo-Clor®, mercuial fungicide
Calo-Gran®, granular mercurial fungicide
Koban®, turf fungicide
Kromad®, fungicide, broad-spectrum
Thiramad®, fungicide, broad-spectrum
Tobaz®, systemic fungicide
Po-San®, herbicide, post emerg., Poa annua control for fairways
Pre-San®, weedgrass herbicide, preemerg., Poa annua control and crabgrass

Trex-San™, broadleaf herbicide, broad-spectrum
Trex-San®, Bent, broadleaf herbicide, broad spectrum, for bentgrass turf
Vitalon®,Dark, turf colorant
Spray-Hawk®, mobile turf sprayer

Manhattan Ryegrass Growers Assoc., P.O. Box 145, Hubbard, Oregon 97032
Manhattan Perennial Ryegrass, seed; medium textured turf with good shoot density and uniformity but having tough, fibrous vascular bundles in the leaves.

Masonite Corporation, 29 N. Wacker Drive, Chicago, Illinois 60606
Fibrex Root Insulator/Weeder, ¼ to ¾ pine bark impregnated with a bio-degradable, selective, pre-emergent herbicide.

J. J. Mauget Co., Inc., P.O. Box 3422, Burbank, Calif. 91504
Mauget, tree injection process
Inject-A-Min, nutrients
Inject-A-Cide, insecticides
Mauget Capsules, fungicide, benomyl

Meinhardt Products Div., 2401 Gardner Rd., Broadview, Illinois 60153
Weed Out, herbicide, selective

Melthor Industries, Inc., 1212 W. 5th Street, Kansas City, Missouri 64101
Penncross Creeping Bentgrass, seed; fine textured, dense, uniform, high quality turf capable of being mowed closely.

Merck Chemical Division, 126 E. Lincoln Avenue, Rahway, New Jersey 07065
Mertect® 140-F, thiabendazole, fungicide, flowable
Mertect® 160, thiabendazole, fungicide, wettable powder
Mertect® 340-F, thiabendazole, fungicide, flowable
Mertect® 360, thiabendazole, fungicide, wettable powder
Mertect 240-F, thiabendazole, fungicide, flowable
Mertect 260, thiabendazole, fungicide, wettable powder
Hormodin®, indole-3-butyric acid, root inducing substance
Gibrel® gibberellic acid, plant growth substance
Agri-Strep, streptomycin formulation, control of certain plant diseases

Merion Bluegrass Association, 101 Park Ave., New York, N.Y. 10017
Merion Kentucky Bluegrass

Miller Chemical & Fertilizer Corporation, P.O. Box 333, Hanover, Penna. 17331
Nu-Film-17, sticker-extender
Nu-Film-P, sticker-spreader
Miller Aide, herbicide activator
Vapor Gard, anti-transpirant

3M Company, New Business Ventures Division, 3M Center, St. Paul, Minn. 55101
System M (Mariner Brand), algaecide, WP, controls chara and filamentous algae
System E (Mariner Brand), herbicide, endothall, pelleted, aquatic, (Fla. only)
System A (Mariner Brand), algaecide, (aqueous solution of copper-triethanelamine complex) controls plankton and filamentous algae
System C (Mariner Brand), algaecide, controlled release, encapsulated formulation of copper sulfate

Miracle Bark, Inc., P.O. Drawer O, Diboll, Texas 75941
Miracle Bark mulch
Miracle Bark Soil Conditioner

Monsanto Company, 800 N. Lindbergh Bldg., St. Louis, Missouri 63166
Roundup, herbicide, bareground

Vibratory plow module on R65 vehicle.

VP12 self-contained vibratory plow.

Make underground installations *WITHOUT* destroying your turf.

Digging ditches across expensively-landscaped lawns or golf courses can be bad business. Who wants to tear up the turf to make underground installations?

Ditch Witch has the answer. In many cases you don't have to trench — you can go underground without it with a Ditch Witch vibratory plow. Turf damage is kept to an absolute minimum; most of the time-consuming and costly restoration is eliminated. You can bury telephone and electric cable, gas and water lines quickly and easily without trenching. You can install a complete underground sprinkler system on a golf course without having to close the course!

Ditch Witch makes vibratory plow modules for all its Modular-matic vehicles. Or, there's the versatile 25-HP VP12, a self-contained vibratory plow package.

If your job calls for main distribution lines, the same Modular-matic vehicle can handle that job, too — just replace the vibratory plow module with a digging module and you're ready to go.

Or, switch from trenching to plowing and back again instantly with a Ditch Witch Combo module, a vibratory plow and offset trenching assembly.

And you can outfit your basic vehicle for other jobs, too. Ditch Witch offers a versatile utility backhoe, a hydraulic boring unit and other money-saving attachments.

When your job calls for underground installation, and it's important to keep turf damage to a minimum, look to Ditch Witch — the leader in the underground equipment field.

DITCH WITCH®

A Division of

CHARLES MACHINE WORKS, INC. P.O. Box 66 Perry, Oklahoma 73077

A full line of equipment from 7-HP to 195-HP

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N

Nalco Chemical Co., 180 N. Michigan Avenue, Chicago, Illinois 60601
Nalkil Bromacil, herbicide, bareground, granular and liquid formulator
Nalkil weed killer, diuron, herbicide, granular formulator
Nalco-Trol, herbicide anit-drift agent, manufacturer

Nugget (Pickseed West), Box 888, Tangent, Oregon 97389
Nugget, Kentucky Bluegrass

Nursery Specialty Products Co., Div. J. A. Hartman Corp., 410 Greenwich Ave., Greenwich, Conn. 06830
Wilt Pruf NCF, antidesiccant (horticultural and agricultural)
Wilt-Pruf NCF, anti-desiccant, combats transplant shock, winterkill, pollution damage

O

Occidental Chemical Company, 4671 Southwest Freeway, Houston, Texas 77027
ZIPP Turf Food, fertilizer (slow release)
ZIPP Lawn Food, fertilizer (slow release)
OXY Lawn Food, fertilizer (slow release)
OXY 99, fertilizer (ammonium sulfate)
Best Lawn Food, fertilizer
Glytac (Ethylene Glycol Bis), herbicide (Non-selective)
Oxycil (Sodium Chlorate, Sodium Metaborate tetrahydrate bromacil), herbicide (Non-selective)
Oxy MBC (Sodium Chlorate, Sodium metaborate tetrahydrate), herbicide (Non-selective)
Oxy BBC (1,2-Dibromo-3-chloropropane), nematicide

Oil-Dri Corporation of America, 520 North Michigan Ave., Chicago, Illinois 60611
Terra-Green, soil conditioner

Olin Corporation, P.O. Box 991, Little Rock, Arkansas 72203
Terraclor, fungicide (controls Rhizoctonia)
Terrazole, fungicide (controls Pythium)
Turfcide, fungicide (controls Brown Patch)

Oregon Chewings & Creeping Red Fescue Commission, 1349 Capitol St., N.E., Salem, Oregon 97303
Chewings and Creeping Red Fescue, seed

Oseco Limited, P.O. Box 219, Brampton, Ontario, Canada L6V2L2
Baron, Kentucky Bluegrass
Sydsport, Kentucky Bluegrass
Emerald, Creeping Bentgrass
Highlight, Chewing Fescue
Reptans, Creeping Red Fescue

P

Parco Products Co., Pottstown Ave. and Dotts St., Pennsburg, Pa. 18073
Super Drench, wetting agent

Rudy Patrick Seed, 52 Leslie Street, Buffalo, New York 14240
Seed Grower and processor, seed

S. B. Penick & Co., 100 Church St., New York, N.Y. 10007
Pyrethrins, insecticide
Rotenone, insecticide
Ryania, insecticide
Pyrethrum-Ryania, insecticide
Resmethrin (SBP-1382), insecticide
Pyrethrum-Ryania-Rotenone (Tri-Excel-DS), insecticide

Pennfine/Pennstar, Box 923, Minneapolis, Minnesota 55440
Seed, Kentucky Bluegrass
Seed, Fescue
Seed, Ryegrass

Pennwalt Corporation, Agchem-Decco Div., 1713 South California Ave., Monrovia, California 91016
Aquathol® endothall, herbicide, aquatic
Aquathol Plus® endothall and Silvex, herbicide, aquatic
Hydrothol® 47 endothall, herbicide, aquatic
Hydrothol® 191 endothall, herbicide, aquatic
Endothal Turf Herbicide, endothall, herbicide, turf
Pennamine D, herbicide,postemergent
Weed Blitz, herbicide, bareground

Phelps-Dodge Refining Corp., 300 Park Ave., New York, N.Y. 10022
Basic copper sulfate, fungicide
Copper Sulfate, fungicide and algicide

Plants For You, R.R. 3, Urbana, Illinois 61801
Crownvetch, pot-grown plants, Penngift or Emerald varieties

Plant Marvel Laboratories, 624 West 119th St., Chicago, Illinois 60628
Water-soluble fertilizers, fertilizers, quick foliar/root absorption
Liquid fertilizers, fertilizers, quick foliar/root absorption
Bent Special, Garden Marvel, Potash Special, Triple Twenty, Lawn Marvel

Premier Peat Moss Corp., 25 W. 45th St., New York, N.Y. 10036
Hi-Orgnite, peat humus, topsoil, potting soil
Spagmos, The 3-Way Mulch, bark mulch
Pep Pots, Pep Trays, Pep Strips
Pro-Mix, for house plants, african violet soil, house plant mulch, vermiculite, perlite, Bar-B-Q base
Pool Pillow, bark nuggets, mini nuggets, decorative bark, oil & grease absorbent
Better'n Manure, Pretty Kitty, lawn & garden loam, floral moss, cactus soil, terrarium soil, hanging basket soil, Premier organic compost, top dressing, Premier Organic 100, 100% organic plant foods, roses, bulbs, vegetables, tomatoes, flowers, trees, shrubs & evergreens, azaleas, rhododendrons & camelias

Prentiss Drug & Chemical Co., Inc., 363 7th Ave., New York, N.Y. 10001
Chlordane, insecticide
Pyrethrum, insecticide
Malathion, insecticide
Diazinon®, insecticide
Aerosol concentrates, insecticide
Warfarin, rodenticide
Rotenone, insecticide
Lindane, insecticide
Baygon®, insecticide
Dursban®, insecticide
DDVP, insecticide

R

Ralston Purina Company, Checkerboard Square, St. Louis, Missouri 63188

Algae Chek, aquatic herbicide
Cygon 2E Insecticide dimethoate, insecticide
Malathion Spray malathion, insecticide
Chlordane 2E Insecticide chlordane, insecticide
Chlordane Insecticide 45E, insecticide
Crabgrass Kill benefin, herbicide
Diazinon spray diazinon, insecticide
Lawn Weed Killer 2,4-D; silvex, herbicide
Ornamental Spray malathion; chlordane, insecticide
Sevin Insecticide Spray carbaryl, insecticide
Systemic Bug Killer disulfoton, insecticide
Grass-N-Weed Vegetation Killer triazinepentachlorophenol, herbicide
Weed-Kill Granules trifluralin, herbicide
Weed-Kill (Pressurized) 2,4+D; dicamba, herbicide

Ra-Pid-Gro Corporation, 88 Ossian, Dansville, N.Y. 14437

Ra-Pid-Gro, fertilizer, 23-19-17, dissolve in water, sprinkle or spray; no burning

Redwood Chemicals Inc., 1215 Jackson, Houston, Texas 77003

BHC (benzene hexachloride), insecticide
Lindane, insecticide
Hothouse 100 (SBP 1382), insecticide for greenhouse
Dormant Oil, insecticide
Sink It 101, soil conditioner and penetration aid

Rockland Chemical Co., Inc., P.O. Box 204 Caldwell, New Jersey 07006

Rockland: Professional Greener Lawn, fertilizer (slow release)
Professional Crabgrass Preventer with Tupersan, herbicide
Professional Crabgrass Preventer with Dacthal, herbicide
Professional Diazinon Cinch Bug Killer, insecticide
Professional Dursban Cinch Bug Killer, insecticide
Professional Benomyl Lawn Fungicide Granulars, fungicide
Professional Lawn Disease Control with Dyrene, fungicide
Professional Crabgrass Preventer with Balan, herbicide
Professional Dursban Concentrate, insecticide
Professional super Dursban cinch bug killer, insecticide
Professional crabgrass preventer with Balan, herbicide (preemergent)
Professional Sevin cinch bug killer, insecticide
Professional Balan 25 crabgrass preventer, herbicide (preemergent)
Professional lawn weed killer "D", herbicide
Professional lawn weed killer with Silvex, herbicide
Professional Dacthal G-5, herbicide (preemergent)
Professional Winter Care, fertilizer
Professional Summer Green with Dursban, fertilizer, insecticide
Super Dacthal 686, herbicide, (preemergent)

Rohm and Haas Company, Independence Mall West, Philadelphia, Pennsylvania 19105

Kerb®, herbicide, pre- and postemergent control of weeds in bermuda grass turf
Fore®, fungicide, turf and ornamentals
Karathane® dinocap, fungicide and miticide
Kelthane®, miticide
Triton CS-7, spreader-binder
Triton AF, adjuvant-foamer
Triton B-1956, spreader-sticker

S

S & D Products, Inc., P.O. Box 66, Prairie du Chien, Wisconsin 53821

Eeesy Grow-Root contack Paket, fertilizer, slow release

Sandoz-Wander, Inc., P.O. Box 1489, Homestead, Fla. 33030

Thuricide Baccilus thuringiensis, insecticide, biological

The O. M. Scott & Sons Co., 160 Main St., Marysville, Ohio 43040

ProTurf Fertilizer, fertilizer, control release
ProTurf Nitrogen, fertilizer, control release
ProTurf Nitrogen plus iron, fertilizer, control release
ProTurf Fairway Fertilizer, fertilizer, control release
ProTurf Super Fairway Fertilizer, fertilizer, control release
Pro-Turf Greens Fertilizer, fertilizer, control release
ProTurf Improved N/K Fertilizer, fertilizer, control release
ProTurf Ornamental Fertilizer, fertilizer, control release
ProTurf Starter Fertilizer, fertilizer, control release
ProTurf Iron-S, fertilizer supplement
ProTurf Fertilizer IV, herbicide/fertilizer combination
ProTurf Fertilizer with Weedgrass Preventer, herbicide/fertilizer combination
ProTurf Fertilizer Plus Dicot Weed Control, herbicide/fertilizer combination
ProTurf Fertilizer Plus Dicot Weed Control II, herbicide/fertilizer combination
ProTurf Starter Fertilizer with Pre-emergence Weed Control, herbicide/fertilizer combination
ProTurf Poa annua Control plus Fertilizer, herbicide/fertilizer combination
ProTurf Weedgrass Preventer, herbicide
ProTurf Weedicide II, herbicide
ProTurf K-O-G, herbicide
ProTurf Monocot Weed Control, herbicide
ProTurf Calif Fert Plus Fungicide, fungicide/fertilizer combo
ProTurf FF II, fungicide/fertilizer combo
ProTurf Fertilizer Plus Fungicide, fungicide/fertilizer combo

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You can handle more hose, handle it faster, easier and with greater safety when you install Hannay reels on your spray equipment. Reel handling will keep your hose in service longer, too.

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ProTurf Fertilizer Plus DSB Fungicide, fungicide/fertilizer combo
ProTurf Broad Spectrum Fungicide, fungicide
ProTurf Systemic Fungicide, fungicide
ProTurf Fungicide III, fungicide
PrtTurf Fungicide II, fungicide
ProTurf Fertilizer Plus Insecticide, insecticide/fert combination
ProTurf Broad Spectrum Insecticide, insecticide
ProTurf Insecticide One, insecticide
ProTurf Insecticide III, insecticide

Sewerage Commission of the City of Milwaukee, P.O. Box 2079, Milwaukee, Wisconsin 53201
Milorganite fertilizer, fertilizer slow release (6-2-0)

Shell Chemical, 2401 Crow Canyon Rd. San Ramon, Calif. 94583
Nemagon®, insecticide fumigant

Sierra Chemical Company, 37650 Sycamore St., Newark, Calif. 94560
Agriform Fertilizers, slow release 16-7-12 (+ iron)
Agriform Planting Tablets, landscape fertilizer
Agriform CRF 19-6-13, greens fertilizer

Stanford Seed Co., P.O. Box 230, Plymouth Meeting, Pennsylvania 19462
Crownvetch, seed, crowns or plants in peat pots
Proprietary turfgrass specialists.

Stauffer Chemical Co., Westport, Conn. 06880
Aspon®, insecticide
Betasan®, herbicide, preemergent
Eptam®, herbicide,preemergent
Imidan®, insecticide
Trithion®, insecticide
Vapam®, soil fumigant

Stull Chemical Company, 1006 Paulsun, San Antonio, Texas 78219
Bivert®, invert emulsion adjuvant
Bivert Spray System, spray equipment for using invert emulsions—kits and complete units

Sudbury Laboratory, Inc., 572 Dutton Rd., Sudbury, Mass. 01776
Sudbury Soil Test Kits, soil testing equipment for pH,NPK
Sudbury tailor-made fertilizers, water soluble fertilizers, unit X, 44% N; unit Y, 44% P; unit Z, 44% K
Solo-Gro Seed Starter Cubes
Sea-Power, liquefied seaweed containing 55 trace elements

Swift Chemical Company, 111 West Jackson, Chicago, Illinois 60604

Reed & Perrine bags it!
NITROFORM*
organic nitrogen
The turf nitrogen for nursery stock, too. Gives the same steady sustained growth.
Turf and Horticultural Products, Synthetics Dept.
Wilmington, Delaware 19899
HERCULES INCORPORATED
*Registered trademark of Hercules Incorporated STH74-19

Par Ex Professional Products, utilizing IBDU as a controlled release Nitrogen

T

Tee-2 Green Corporation, 1212 West Eighth St., Kansas City, Missouri 64101
Seed, bentgrass

Thompson-Hayward Chemical Co., 5200 Speaker Rd., Kansas City, Kansas 66106
Casoron®, dichlobenil, herbicide, selective preemergent
Du-Ter®, triphenyltin hydroxide, fungicide
De-Fend®, dimethoate, insecticide, systemic
Biotrol®, BTB, biological insecticide
Ded-Weed®, herbicide, phenoxy, postemergence
Uni-Mix®, surfactant/compatibility agent

Tuco, Div. of The Upjohn Co., Kalamazoo, Michigan 49001
Acti-Dione TGF, cycloheximide, fungicide, turf and ornamental
Acti-Dione Thiram, cycloheximide and thiram, fungicide, turf
Acti-Dione RZ, cycloheximide and PCNB, fungicide, turf
Enide 50W, diphenamid, herbicide, dichondra, ornamentals
Botran 75W, DCNA, fungicide, fruit trees, ornamentals
Proxol 80SP trichlorfon insecticide, turf and ornamental

Twin City Seed, 500 30th Ave. N.E., Minneapolis, Minnesota 55418
Park, Kentucky Bluegrass seed

U

Union Carbide Corporation, Agricultural Products and Services, P.O. Box 1906, Salinas, California 93901
Sevin® carbaryl, insecticide (sprayable and wettable powders for ornamental, tree, and lawn insect control
Sevin® 4 Oil carbaryl, insecticide, dispersion of Sevin in a non-phytotoxic, low volatile oil for tree insect control
Sevimol® carbaryl, insecticide (suspension of Sevin in molasses for shade tree and ornamental insect control)

Uniroyal Chemical, Div. of Uniroyal, Inc., Amity Rd., Bethany, Conn. 06525
Omite®, insecticide; wettable powder, dust, liquid
Slo-Gro®, growth regulant
Alanap®, herbicide
Slo Gro® (maleic hydracide), growth regulant
Omite®, insecticide
B-Nine SP®, growth regulant

U.S. Borax & Chemical Corporation, 3075 Wilshire Blvd., Los Angeles, California 90010
Maintain® CF 125, growth retardant
Maintain® A, growth regulator, tree wound paint
Ureabor®, nonselective herbicide
Ureabor® 8D, nonselective herbicide
Monobor-Chlorate® Granular, nonselective herbicide
Hibor® C, nonselective herbicide
Polybor-Chlorate®, nonselective herbicide
Borocil® IV, nonselective herbicide
Potassium Chloride, potash
Borax, trace elements
Solubor, trace elements

U.S. Gypsum, 101 South Wacker Dr., Chicago, Ill. 60606
Grand Prize®, natural clay soil conditioner

USS Agri-Chemicals, Div. of USS Steel Corp., P.O. Box 1685, Atlanta, Georgia 30301
Vertagreen, lawn and garden fertilizers
Vertagard, environmental protection chemicals
Vertagreen, (slow release) U.F. Source-sulfate potash; minor elements, 16-0-8, 16-4-8, 19-5-9, 18-0-9, 12-4-8, 17-0-8 w/Balan, Turf fertilizer
Vertagard, fungicides, insecticides, nematicides, herbicides

V

Velsicol Chemical Corp., 341 East Ohio Street, Chicago, Illinois 60611

Banvel® 4 WS and OS dicamba, herbicide, water soluble and oil soluble; postemergent
Banvel® 510 dicamba + 2,4,5-T, herbicide, oil soluble, postemergent
Banvel® 520 dicamba + 2,4-D, herbicide, oil soluble, postemergent
Banvel® 710 dicamba + 2,4,5-T, herbicide, water soluble, postemergent
Banvel® 720 dicamba + 2,4-D, herbicide, water soluble, postemergent
Banvel® 310 dicamba + 2,4-D and 2,4,5-T, herbicide, oil soluble, postemergent
Banvel® 320 dicamba + 2,4-D and 2,4,5-T, herbicide, water soluble, postemergent
Banvel XP dicamba, herbicide, pellet
Chlordane, insecticide, 25G, 72EC, 40% WP, 5%D, 10%D, 10%G
Heptachlor, insecticide, 2.5% G, 5% G, 10% G
Vegatrol, herbicide, complete line of amine salts and ester formulations of 2,4-D and 2,4,5-T, oil and water soluble

Vineland Chemical Company, P.O. Box 745, Vineland, N.J. 08360

Dal-E-Rad DSMA, herbicide, contact
Dal-E-Rad+2 DSMA + 2,4-D, herbicide, contact and selective
Rad-E-Cate Sodium dimethylarsinate, herbicide, contact
Super Crab-E-Rad + 2 amonium methyl arsonates and 2,4-D, herbicide, contact and selective
Super Crab-E-Rad A.M.A., herbicide, contact
Super Crab-E-Rad calar calcium acid methyl arsonate, herbicide, contact
Vi-Par 2,4-D + MCPP,herbicide, contact and selective
Vi-Pex (MCPP), herbicide, selective
Weed-E-Rad 100, herbicide, contact
Weed-E-Rad 360 DSMA, herbicide, contact
Weed Hoe 120, herbicide, contact
Weed Hoe 108, herbicide, contact
Weed Hoe 2X, herbicide, contact
Weed-E-Rad +W, herbicide, contact

Virginia Chemicals Inc., 3340 West Norfolk Road, Portsmouth, Virginia 23703

Winterlawn® Grass Color Concentrate, permanent pigmented, water-soluble emulsion color system for dormant vegetation; also in aerosol containers

Vistron Corporation, 1650 Midland Bldg., Cleveland, Ohio 44115

Urea, fertilizer
Anhydrous ammonia, fertilizer
Nitrogen solutions, fertilizer

W

Warren's Turf Nursery, Inc., 8400 West 111th St., Palos Park, Illinois 60464

A-20 Kentucky Bluegrass, sod
A-34 Kentucky Bluegrass, sod

Water-In, Inc., P.O. Box 421, Altadena, California 91001

Water-In, wetting agent, soil conditioner, liquid or dry form
Gro-Tabs, fertilizer (slow release), tablets

West Chemical Products, Inc., 42-16 West St., New York, N.Y. 11101

Assault, herbicide, non-selective, bareground

Weyerhaeuser Company, Tacoma, Wash. 98401

Silva Fiber, mulch for hydro-seeding

Whitney-Dickinson Seeds, Inc., 52 Leslie St., Buffalo, New York 14211

Galaxy, Kentucky bluegrass

Winru Chemical & Sales Co., 923 State Line, Kansas City, Missouri 64101

Baygon, insecticide
Synergized Pyrethrins, insecticides
Chlordane, insecticide
Malathion, insecticide
Diazinon, insecticide
Zectran, insecticide
Infuco Compression Sprayers, environmental protection chemical sprayer
Phostoxin, fumigant

Witco Chemical Corporation, Organics Division, 277 Park Ave., New York, N.Y. 10017

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Z

Zonolite, W. R. Grace & Co., P.O. Box 517, Travelers Rest, S.C. 29690

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Horticultural Perlie
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Redi-Earth, synthetic soil

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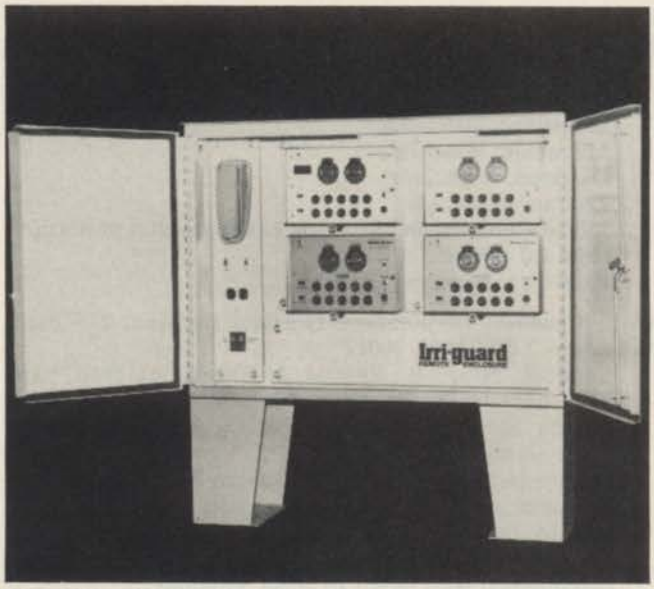
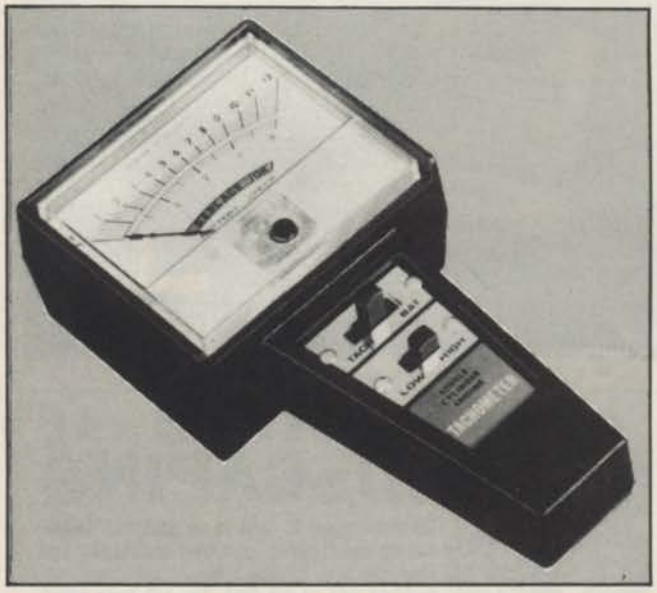


REMOTE FIELD ENCLOSURE: White Turf Engineering, Winchendon, Mass.

This heavy duty all steel remote enclosure for automatic irrigation control incorporates beauty and superintendents' convenience The unit is all weather resistant and vandal proof. It features: two-way communication systems, fluorescent lighting — for ease of night time programming, 120V supplemental power source, low wattage heat light for dampness and condensation control and terminal strips for controller — zone valve — master satallite wiring, etc. For more details, circle (705) on the reply card.

CORE PROCESSOR: Ryan Turf Equipment, Lincoln, Neb.

This processor collects cores, processes them, separates thatch from soil, spreads as topdressing and works soil particles into the turf. This implement can be coupled to and operated simultaneously with Ryan's aerator. A machine operator and an assistant are all the manpower needed to operate the aerator and core processor attachment. For more details, circle (706) on the reply card.



WIRELESS TACHOMETER: Dixson, Inc., Grand Junction, Colo.

A wireless tachometer ideal for use with one cylinder 2 and 4 cycle engines. Engines revolutions are measured without stopping the engine or making any connections. The tach is merely held near the spark plug to take a reading. A built-in antenna receives radiated pulses which are converted into R.P.M. readings. The instrument is equipped within ± 2 percent of full scale. For more details, circle (707) on the reply card.

PORTABLE SPRAY BOOM: Agricultural Chemical Service, Bellaire, Tx.

This portable spray boom can be used to apply insecticides to the top of tall trees where large equipment cannot go. The unit can be used separately. It's limited in operating distance from the power and material source only by the length of the hose. The boom can be extended to 30 feet, with a total spray ceiling of around 75 feet, operating at 350 P.S.I. for extra high places. It can also be lowered to 12 feet when excess height is not necessary. For more details, circle (708) on the reply card.

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RYAN SOD CUTTER-18 inch with sulky roller. Battery starter. In excellent conditon. H. B. Michelson, Rt. 2, Box 2244, Elk Grove, Calif. 95624. Phone 916 682-9222.

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MISCELLANEOUS

TREE APPRAISALS, Surveys, loss evaluations and expert consultation services. For names of members of the American Society of Consulting Arborists, Inc., throughout the country, contact: Executive Director ASCA, 12 Lakeview Ave., Milltown, New Jersey 08850.

Controversial Herbicide Defended by Scientist

The American consumer would become the ultimate loser and agriculture the immediate loser if future use of 2,4,5-T is limited or banned, according to a researcher with the Texas Agricultural Experiment Station (TAES).

Dr. Joseph Schuster, head of Texas A&M University's range science department and a TAES scientist, emphasized that future use of the herbicide that is widely used to control brush and weeds is in jeopardy.

"This herbicide is highly effective in controlling noxious woody plants on rangelands and forests. It has a record of relative safety covering more than two decades of use. Now, this vital product is awaiting a public hearing called by the Environmental Protection Agency. Action following the hearing remains to be determined," the scientist added.

Schuster emphasized that our country's economic strength and its ability to produce needed food, fiber, energy, timber and other resources are sometimes weakened by demands made in the name of protecting citizens and the environment.

Costs of the agricultural items as meat, wool, mohair, and forest products are likely to climb if use of 2,4,5-T is banned or limited, Schuster said.

What is happening concerning this herbicide points up the risk to other important agricultural herbicides, regardless of their safety records, Schuster continued.

"The general public needs to understand more about the vital uses of each product, their safety records, how to use the products effectively, as well as possible potential dangers. The public should be concerned with protecting the environment, but citizens should depend on scientists and others trained in the field to determine the hazards involved in using herbicides," he added.

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E. I. DuPont de Nemours & Co. .....3rd cover
FMC Corp., Agri Machinery Div. 51
FMC Corp., Sidewinder Plant 20
FMC Corp., Sweeper Div. 39
Gordon Corp., PBI.....49
Clifford B. Hannay & Son 61
Hercules, Inc. 12, 14, 18, 23, 30, 38, 47, 56, 58, 60, 62, 63
Jacklin Seed Co. 9, 27, 45
Jacobsen Mfg. Co..... 5
Jobe's Tree Food Spikes 15
Kohler Co.....2nd cover
Lifetime Career Schools.....63
Loft's Pedigreed Seed Co. 4th cover
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Milwaukee Sewerage Commission 17
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F. E. Myers & Bro. Inc.....25
National Pest Control Association 35
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Park Maintenance 47
Pickseed West, Inc.....19
Rhodia Inc., Chipman Div.....40-41
Ryan Equipment Co. 46
Sierra Chemical Co.....57
Stihl American, Inc.....13
Swift Chemical Co.....21
Tuco Products Div., Upjohn Co.....53
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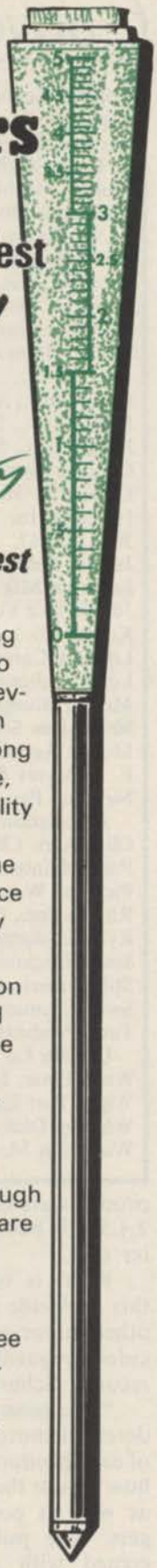

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Just write to us on your letterhead and we'll rush you a free sample for testing, packed in a professional quality rain gauge.

You'll receive enough Galaxy for a 50-square foot test plot. Not enough to make a million bucks, but enough to let you see how Galaxy outperforms your best bluegrass. Send to:

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trimmings

For some time, the hottest item in sports was artificial turf. A few conflicting opinions arose and soon athletes and stadium owners in the U.S. began quarrelling over its use. But throughout England and continental Europe complaints about the condition of playing surfaces are being eliminated by improving natural turf with automatic underground irrigation systems. An indication of the growing popularity of automatic irrigation on soccer fields is the fact that four of the nine natural-turf fields designated for the 1974 World Cup Soccer Championship in Germany have automatic irrigation.

Reports from the U.S. Transportation Department's Federal Highway Administration (FHWA) show that motor gasoline sales continue to decline, though less than before. Based on reports from 18 states, gasoline sales for April 1974 showed a three percent decrease from sales reported for April 1973. The FHWA is now issuing each month a cumulated tabulation of gross gallons of motor gasoline sales reported in each state during the three most recent months for which substantial information is available.

You've heard of pennies from heaven, well how about nitrogen from rainfall? It seems a couple of Agricultural Research Service scientists, Gerald E. Schuman and Robert E. Burwell, found that rainfall contributed an average of 6.47 pounds of nitrogen per acre each year in an area where annual precipitation is about 30 inches. Precipitation nitrogen was equivalent to about two-thirds of the soluble nitrogen in runoff from a planted watershed fertilized at the recommended rate of 150 pounds of nitrogen per acre.

Kansas City park director, Frank Vaydik, is charging ahead with a reforestation program designed to fill holes in the city's treescape left by elm bark beetles. Tree men estimate elm casualties at about 50 percent since the blight was first identified there in 1957. Vaydik's planting program now numbers 9,143 trees.

A poll conducted in Oregon last year showed 90 percent of the population favored approval of the use of DDT to meet the tussock moth emergency.

Moth sniffing dogs, are being trained to detect by scent, gypsy moth egg masses, larvae, pupae and living female moths on camping equipment being moved from an infested area to an uninfested one. Scientists at Michigan State University under a cooperative agreement with the USDA, will evaluate the factors affecting how easily three pure-bred male German shepard dogs can "sniff out" the insect in each of its life stages. After training, the dogs' ability to detect gypsy moths will be field tested.

A coconut palm tree-tment for the lethal yellowing disease that has killed thousands of palms in southern Florida will soon be on the market. Federal officals recently okayed Pfizer Chemical Company's label for Terramycin. Cost of the antibiotic should run about 30 cents per gram and one to three grams is used in treatment. Florida plans to buy $50,000 worth of Terramycin.

"No females need apply" is the slogan of a campaign recently launched in Maryland aimed at monitoring the population of that insatiable leaf eater, the gypsy moth. The project, an intensified repeat of a similar one in 1973, uses traps treated with a synthetic sex attractant. The flying male moth enters the trap and is captured on a sticky substance in the smaller traps or is killed outright by pesticides in the larger traps. Each trap will be checked at least once during the summer and all will be collected at the end of the season.

Thousands of Lake Tahoe basin trees have been damaged or killed by salt water used for de-icing highways in winter. Trees growing near de-iced highways were more often damaged or dead than trees at great distances from the pavement. A California forester, Doug R. Leiz, said the damage would continue if the use of de-icing salt continued at the current level.

"The course looks great this summer."

"And he seems to be spraying less often than before."

This summer, give your members two things they will really appreciate. A green, healthy playing surface and far less interference from spraying equipment.

You can, if you take the second step in the Du Pont TERSAN® 1-2-3 Disease Control Program and start spraying TERSAN 1991 on your tees, fairways and greens now. It does an outstanding job of controlling Dollar Spot and Large Brown Patch. Used as directed, it can actually stop these summer turf diseases before they have a chance to damage your turf.

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"In our area, we need a bluegrass that comes up fast and stays green longer... 3 years ago we picked Baron Kentucky Bluegrass. And we haven't changed since."

As a continuing series in reporting the thoughts of some of the best sod growers, here are some comments Loren Hentges of Blaine, Minnesota had about

baron KENTUCKY BLUEGRASS

U.S. Dwarf Variety Plant Patent No. 3186

"Our season isn't as long as most areas of North America and the grass we seed must get up quickly and mature as fast as possible. We usually got about half a crop until Baron came along. Now we get two-thirds or three-quarters of a crop in the same growing period."

"I always felt that one of the big disadvantages to a bluegrass sod was dry weather. Baron stands dry weather better than any bluegrass I have ever grown."

"Almost all of our customers are pleased with our Baron sod. In fact, I've never really had any complaints in the 3 years we've been growing Baron."

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"With Baron, I can take a crop off, re-seed for another stand and still get good establishment and excellent color in the Spring."

"The shipping quality of our sod is important to us. Baron makes a good roll because it is dense and keeps the roll tight."

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